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A

QUARTERLY JOURNAL OF ORNITHOLOGY.

EDITED BY
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AND
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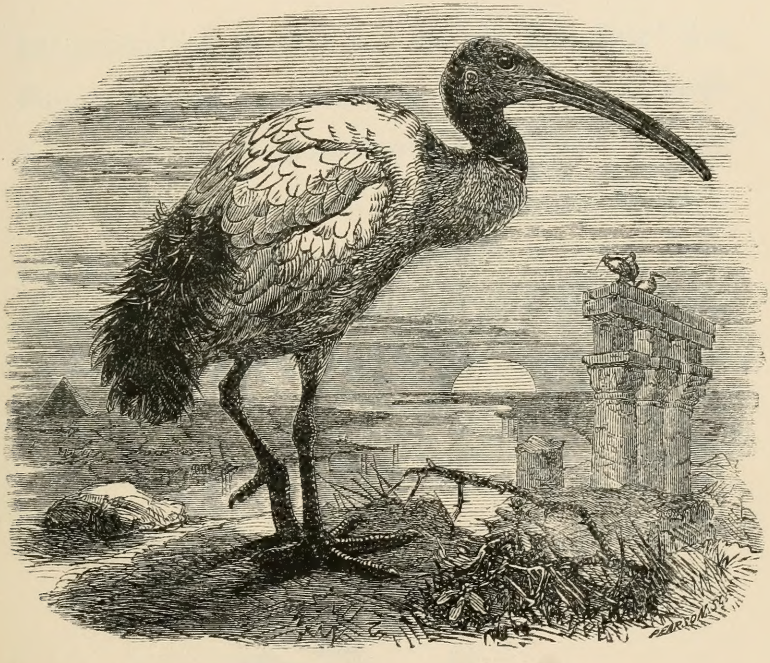

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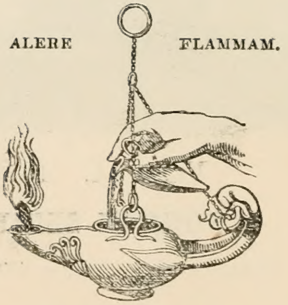
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PREFACE.

In concluding another volume of 'The Ibis' the Editors beg leave to thank the many contributors to its pages for the support they have received. It only remains for them to add that the course of prosperity that has attended this Journal for so long shows no signs of change, and that the prospect for the coming year seems as fair as the retrospect of the past.

O. S.
P. L. S.

October 1878.

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112,	9,	for *Numenius* read *Tantalus.*
264,	8 & 13,	for *Œstrellata* read *Œstrelata.*
285,	4,	for *assimilis* read *affinis.*
302,	18,	*for* 1837 *read* 1827.
303,	15,	for *Setophoga* read *Setophaga.*

THE IBIS.

FOURTH SERIES.

No. V. JANUARY 1878.

I.—*A Contribution to the Ornithology of Asia Minor.*

By C. G. Danford.

[Continued from 'The Ibis,' 1877, p. 274, and concluded.]

1. Gypaëtus barbatus (L.). *Lorru, Kel lorru.*

This bird is so common throughout the Taurus that hardly a day passed without our seeing some of them, as they either methodically beat the sides of the ravines or swooped about the villages, hankering after skeletons which had been picked bare by Ravens and Griffon-Vultures. Such a meal seems best suited to their taste, and they spend days in breaking up perfectly dry bones. How they get the great jagged bits down their throats is hard to understand; but that they do succeed in swallowing broad pieces more than four inches long, was proved by the dissection of their large and long but not muscular stomachs, which were filled with such fragments, in addition to pieces of hoof, mats of wild-pig's hair, collections of vulture's toes, locusts, and a good deal of grass-root. The effect of this diet seems to be to free the bird entirely from the offensive smell of Vultures proper.

The Lämmergeyer begins breeding in the Taurus about the end of January. On the 2nd February a nest containing two eggs was found near Nimroun. In its lining were a good many rags, and the rather ghastly item of a lock of woman's hair. Another nest, with a single fresh egg, was taken quite late in the same month. The nest is generally placed in a hollow on the face of a high cliff. In one angle of the ravine close to Zebil, four nests were found pretty close together. Three of these Nizam Ali, a splended rock-climber, succeeded in reaching; but they all turned out to be old, and used merely as charnel-houses and larders, being crammed with bones. The remaining nest, in which the birds were evidently breeding, defied all attempts to reach it; and no rope of sufficient length being procurable, we had very reluctantly to give it up.

The largest specimen shot was a female, which weighed 11 lb., the total length being 49 inches, and the wing-spread 106½ inches. The largest male killed weighed about the same, its total length being 44 inches, and the wing-spread 102. Adult females seem to be rather more rust-coloured in the throat and underparts than the males. This species was also seen in the north part of the country, but rarely.

2. VULTUR MONACHUS, L. *Kara kartal* (Black Vulture).

A single pair, which appeared at Zebil on the 14th Feb., and remained stationary, were the only birds of this kind observed.

3. GYPS FULVUS (Gmel.). *Kartal* (Vulture).

Common everywhere. In the cliffs about Zebil they nested in the latter end of February and the beginning of March. We constantly watched them carrying sticks and branches for the construction of their nests. A pair killed weighed 21 lb. and 19 lb. respectively. The former was a female, and measured 105 inches across the wings, and had a total length of 45 inches.

4. NEOPHRON PERCNOPTERUS (L.). *Ak Baba* (White father).

Common. The first of these birds arrived at Anascua April 4th, and were quickly followed by larger instalments on the 6th. Numbers were seen following the course of the Sihoun on their northward migration.

5. **Falco peregrinus**, Tunst.

Common and resident throughout the mountains.

6. **Falco subbuteo**, L.

Not uncommon. Specimens were obtained in the mountains and at Mersivan.

7. **Falco æsalon**, Tunst.

Occasionally observed.

8. **Falco vespertinus**, L.

Seen in flocks near Kaisariyeh, and found breeding at Boghaslü-khan, a village further to the north.

9. **Falco cenchris**, Naum.

Very common in the interior, where it breeds in old castles and under the roofs of the village houses. At Boghaslü-khan, having imprudently given baksheesh for some eggs of this bird, our night's rest was disturbed by the arrival of about forty settings at intervals.

10. **Falco tinnunculus**, L.

Common everywhere, and resident.

11. **Elanus cæruleus** (Desf.).

A pair of these birds was repeatedly observed during our stay at Zebil; but they always managed to keep just out of shot. Their flight was rather peculiar, consisting of half a dozen flaps of the wing in very quick succession, followed by a long sail. They were often noticed chasing the Stock Doves, but were never seen to strike any. Their occurrence in winter and in so cold a climate is rather singular.

12. **Haliaëtus albicilla** (L.).

During the early part of April a pair frequented the valley of the Sihoun; and later on the species was found nesting in low cliffs in the interior.

13. **Haliaëtus leucoryphus** (Pallas).

Repeatedly and closely observed at Zebil. The very marked colouring of the tail makes this species easy to distinguish on the wing. They haunted the rocks near the village; but we could never manage to secure a specimen. On various occasions they passed within a few yards, but in places where, if shot, it would have been impossible to retrieve them. A nest, taken in the interior, which contained a single egg, and was built on the topmost branches of a tall slender tree, appeared to belong to this bird.

14. AQUILA CHRYSAËTOS (L.). *Kara kush* (Black bird).

Common and resident. Breeds in the mountains and in the interior in low ranges of rock, the nests being generally easy to get at. The first nest was taken on the Bulgar dagh, near Jeni keui, March 30th. It was of the usual construction, sparingly lined with green fir twigs, and contained two richly marked eggs. All the other eggs taken were remarkably poor in colour, some being nearly white. The above Turkish name is applied to all large Raptorial birds.

15. AQUILA MOGILNIK (Gm.).

Not common in the mountains, but numerous in the interior, where we took a few nests from willows and other trees. The eggs of this species appear to be, as a rule, larger than those of the Golden Eagle, and are decidedly more pyriform. The breeding-time seems to be rather variable, as fresh settings, incubated eggs, and young birds were all obtained in the second week of May. At Kaisariyeh a fine old female was brought to us by a man who stated that he had shot the bird off her nest, which was situated *in the rocks*, and contained two young birds. Some eggs taken from a similar situation, in a district where trees are very scarce, agree perfectly with the identified eggs of the Imperial Eagle.

16. AQUILA NÆVIA (Gm.).

Seen frequently in the wooded districts near the Black Sea.

17. AQUILA PENNATA (Gm.).

Not uncommon in the interior. A nest, which was built in a high tree of the aspen species, was lined in the usual manner with fresh leaves, though no eggs had been laid by the 5th May.

18. Buteo vulgaris, Leach.

Occasionally met with at Zebil and Anascha, but not so common in the mountains as in the interior.

19. Buteo desertorum (Daud.).

Met with at Anascha March 29th. Appears to be rare.

20. Buteo ferox (Gm.).

Common in the barren country, where it nests among the rocks, laying as many as four eggs. In the mountains it is less frequent, but appears to be resident.

21. Milvus ictinus (Savigny).

Two or three were observed in the north of the country; but it was never seen in the Taurus.

22. Milvus migrans (Bodd.).

First appeared in the mountains April 4th. It became tolerably common there, but was afterwards found very numerous about the towns on the plateau.

23. Astur palumbarius (L.).

Occasionally observed in various localities, but nowhere common.

24. Accipiter nisus (L.). *At maja.*

Common everywhere.

25. Circus cyaneus (L.).

A single specimen was seen on the stony levels at the top of the Kür dagh, and others near Inje-su.

26. Athene noctua (Retz.).

Generally common among the rocks and near villages.

27. Syrnium aluco (L.).

A single specimen was shot at Zebil.

28. Asio otus (L.).

Abundant on the marshy grounds of the interior.

29. Bubo ignavus, Forst. *Gedschi kusk* (Nightbird).

Common throughout the country among rocks and woods. Found nesting at Kaisariyeh May 7th.

30. Scops giu (Scopoli).

From the beginning of March up to the time of our leaving the country the mournful monotonous note of this little Owl was heard all night long about the villages, and sometimes during daytime in the dark juniper-woods at Giaour keui.

31. Jynx torquilla, L.

Rare; two specimens were shot at Anascha, May 17th and April 6th.

32. Gecinus viridis (L.). *Cham agri.*

Not common, but well distributed in the oak- and fir-woods of the mountains. Perpetual stories were told us of the existence of another sort of Cham agri, whose throat was always described as being entirely red. Rewards were offered and plenty of attempts made to procure a bird answering to this description; but as they resulted in nothing but *P. viridis,* the account of the existence of a red-throated Woodpecker in the Taurus may be regarded as apocryphal. The words *Cham* and *agri* mean fir and pain; so that the name is probably a fanciful allusion to the cry of the bird, as if it proceeded from a fir tree in distress.

33. Dryocopus martius (L.).

Rare, but occasionally seen, and oftener heard among cedars and upper fir-woods.

34. Picus lilfordi, Sharpe & Dresser.

Rather common, but local. The first specimen was shot in the beech-woods of Gozna; none were observed at Zebil; but a good series was obtained at Anascha. All have the white of the rump strongly barred with black. It is rather a shy bird, resembling in habits its close ally, *P. leuconotus.* Its note is also similar, being rather weak and not harsh. It is very fond of drumming on hollow trees, the noise made being something like the springing of a rattle. A nest found at Anascha April 9th was placed in a dead fir. The eggs were four in number, and were deposited about two feet below the entrance-hole. They were of the usual Woodpecker-type, but were unfortunately broken during the descent of the mountain. This nest was at an elevation of 5500 feet; but another pair were observed nesting in a plane tree much lower down, in the valley of the Sihoun. Iris red; bill and legs slate-coloured.

35. PICUS MINOR, L.

Common on the Bulgar dagh among the deciduous woods and orchards. To the northward it is much rarer, doubtless from the scarcity of suitable localities.

36. PICUS MEDIUS, L. *Tachdelen.*

Common everywhere in oak- and fir-woods, but rarely seen among the cedars. Specimens of this bird and the preceding, killed near villages, always had sooty breasts, caused by the trees in such situations being smoke-begrimed. The above Turkish name is applied to Woodpeckers generally.

37. CUCULUS CANORUS, L. *Kuku.*

Common in the Taurus. It arrives during the first week of April.

38. CUCULUS GLANDARIUS (L.).

Only once seen, in the mountains, April 20th. Common in the interior.

39. CORACIAS GARRULA, L. *Jeshil karga* (Green Crow).

Common everywhere. Arrived on the same date as the preceding.

40. CORACIAS INDICA, L.

Once seen on the level country at the base of the Ala dagh, between Giaour keui and Bereketlü.

41. ALCEDO ISPIDA, L. *Kutchuk Balukdye* (Little Fisher).

A single specimen was seen in the ravine below Zebil, Dec. 16th.

42. ALCEDO RUDIS, L. *Balukdje* (Fisher).

At the falls of the Cydnus, near Tarsus.

43. UPUPA EPOPS, L. *Chaoush kush* (Sergeant bird).

Common everywhere. The first specimen was seen March 12th. Nested in stone walls about the villages of the interior.

44. Caprimulgus europæus, L.
Observed at Anascha and at Kaisariyeh.

45. Cypselus apus (L.).
Very abundant about the villages of the interior.

46. Cypselus melba (L.).
Common in the mountains. First seen near Anascha, March 22nd.

47. Chelidon urbica (L.).
Seen for the first time, and in considerable numbers, on the Kür Mountains, near Anascha, at an elevation of 7000 feet.

48. Cotyle rupestris (Scop.).
Common in rocky neighbourhoods on the plateau and among the Mountains.

49. Hirundo rustica, L.
Common. Arrived at Anascha April 7th.

50. Cotyle riparia (L.).
Not seen in the mountains. Abundant near Kaisariyeh.

51. Muscicapa collaris, Bechst.
Not uncommon among the mixed woods at Anascha. Arrived April 10th.

52. Muscicapa grisola, L.
Tolerably common in the interior.

53. Lanius excubitor, L.
Observed near the Black Sea.

54. Lanius minor, Gm.
Common throughout the country. Arrived in the Taurus April 29th.

55. Lanius collurio, L.
Equally well distributed and abundant; first seen April 19th.

56. Regulus cristatus, Koch.
Common in the Taurus.

57. Regulus ignicapillus (C. L. Brehm).
More abundant than the preceding.

58. Ægithalus pendulinus (L.).

The only district in which this bird was observed was at Kaisariyeh, where it was not uncommon about the gardens and among the willow trees near marshes.

59. Acredula tephronota (Günth.).

This, the only species of Long-tailed Tit which we have met with in Asia Minor, was common enough in sheltered situations on the Bulgar and Anascha Mountains, but was not observed either on the Ala dagh or in the country to the north of that range. It prefers oak- and beech-woods, and was found up to 4000 feet elevation. A number of specimens killed in the Jehanum deresi, near Zebil, were remarkable for having the eyelids puce-coloured, instead of the usual orange-red of those killed at the same season in other localities. No variation could be detected in the plumage. The habits and notes of this little bird are identical with those of the British species. A large series was obtained, which all agree in having dark grey throat-spot well defined.

60. Parus cæruleus, L.

Generally common.

61. Parus major, L.

Not uncommon at moderate elevations.

62. Parus lugubris, Natt.

Common in mountain districts, especially in gardens and the outskirts of woods. A nest found at Anascha April 16th contained seven eggs, and was constructed of dry grass, and lined first with wool and afterwards with feathers.

63. Parus ater, L.

Common in the coniferous woods.

64. Sitta cæsia, Meyer.

Numerous among the oak-woods and walnut-groves, but never visits the conifers. Specimens from the Taurus are unusually bright in the colouring of the underparts, but do not otherwise differ from the ordinary European form. Nests about the middle of April. A nest found at Anascha was lined with thin flakes of the outside bark of the cherry-tree.

65. Sitta syriaca, Ehr. *Kaïya bulbul* (Rock-Nightingale).

Common in all situations suited to its habits, and found even among the stone heaps in woods. Though almost entirely a rock-bird, it occasionally frequents bushes and trees, two having been shot from the large walnuts near Zebil. Nests in April under overhanging rocks.

66. Sitta krueperi, Pelz.

This is by far the most abundant Nuthatch of the Taurus, and one of its most characteristic birds. No better proof can be adduced of the backward condition of our ornithological knowledge regarding Asia Minor than the fact that this species was but comparatively recently discovered by Dr. Krüper. We first became acquainted with it on the Jamanlar dagh, where, in one morning, eighteen specimens were collected without any difficulty. From Smyrna to the woods on the above mountain and back again is an easy winter day's excursion; and from this district to the eastern end of the Taurus I believe that there is not a single fir-wood which is not well stocked with this interesting species. It also exists, no doubt, in the Antitaurus and Giaour dagh; but whether its range extends beyond the Palanga Ova and other elevated plateaux which intervene between the Taurus and the mountains of Armenia and Kurdistan is a matter for future investigation.

It occurs along the upper edges of the oak-woods, chiefly frequents the pines, and is not uncommon among the cedars and junipers up to the limit of the tree-growth. Its habits may be said to be strictly arboreal, though a specimen was once shot amongst a heap of loose stones. It does not ascend trees spirally, but prefers the upper branches, and may often be seen hanging like a Tit to the outer sprays and cones. It has a very loud voice for so small a creature, and at least four distinct cries. One of these is a short clear call-song, uttered when the bird is at rest; others resemble the cry of the common Nuthatch and the spring notes of the Great Tit; but the strongest and most startling is the Jay-like screech, with which it signals its alarm or, Woodpecker-like, foretells coming rain.

S. krueperi began nesting in the lower fir-woods of Anascha as early as the 6th March; and eggs were laid by the first week of April; such birds, however, as had chosen their breeding-quarters in the higher and more exposed regions of the Ala dagh, had not even finished building a fortnight later*. The nests were very easy to find, and so numerous that a couple of days' search on the 17th and 18th of April resulted in the discovery of about twenty, and that without any great extent of ground being gone over or a single nest having been previously marked down. Most of these nests contained eggs, about half of which were, more or less, incubated. The usual complement seems to be five, as stated by Krüper†; but others contained six; and in one instance a setting of seven was found. The eggs resemble those of the Common Nuthatch, but are more spotted, the number, size, and distribution of the spots being subject to considerable variation. The nests were usually placed very nearly or just behind the bark of a rotten fir-stump, and could easily be exposed by breaking away the bark with the hand. They were not, however, built between the bark and the stem, but in a chamber excavated in the latter. A small round entrance-hole is bored; and the height above the ground varies from one to a dozen feet. Occasionally deserted Woodpeckers' holes are used, which, judging from their size, must originally have belonged to *Picus medius*. In no instance was the slightest attempt made to fill up the unnecessarily large entrance. For the groundwork of the nests filaments of juniper-bark were always used; indeed the stringy ragged covering of that tree is a favourite building-material with many birds of this district. If, however, there was a unanimity of opinion about the foundation and exterior, the greatest diversity of taste prevailed in the furnishing of the interior. The linings of four nests, taken within a radius of a hundred yards, were, respectively, fir-seed wings, fine white wood fibres, and goat's hair, while the last, evidently belonging to a bird with great ideas of comfort, was thickly wadded with hare's fur, and ornamented with one long fluffy Snow-Partridge's feather. The general food of this species consists of insects and fir-cone seeds.

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* It is rather singular to find this species nesting fully six weeks earlier than it does in the neighbourhood of Smyrna, and that, too, at a greater elevation. (See Krüper, Mommsen's 'Griechische Jahreszeiten,' Heft iii. p. 213, 1875, "The laying-time begins in the middle of May.")

† *L. c.* p. 213.

67. TICHODROMA MURARIA (L.).

Not uncommon about the the rocks near Zebil, where it is resident throughout the year.

68. CERTHIA FAMILIARIS, L.

Evidently rare; for although the character of the country about Gozna and Giaour keui seemed just suited to its habits, only five were observed. Specimens obtained correspond with the ordinary European form.

69. TROGLODYTES PARVULUS (Koch).

Generally common.

70. CINCLUS AQUATICUS, Bechst.

Common on the upper waters of the Cydnus, near Zebil, where a series of twelve specimens was obtained, which all agree closely. Compared with British specimens, the Taurus birds are paler on the head and back, being about the same colour as examples from Eastern Europe. The white of the breast is also equal in extent; but the ferruginous colour of the underparts is very much fainter. The feathers about the abdomen are more distinctly tipped with white, especially in females, which may be separated from the males by this characteristic. The lighter colour of the upper parts therefore agrees with *C. albicollis*, while the absence of the rich rust-colour on the under portions of the body brings it closer to *C. melanogaster*. The intermediate position of the Taurus bird seems therefore to detract from the claims of the two above-mentioned forms to specific distinction *.

In Mr. Dresser's article on *C. albicollis* † evidence is adduced to show that the Dippers of the south of Europe and of the east build open nests. We were only able to observe one nest, and that a new one, hardly completed. It was placed in an exposed situation on the face of a large boulder, and was as much domed as any Dipper's nest in this country.

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* [In my paper on the genus *Cinclus* (Ibis, 1867, p. 109 *et seq.*) I referred Trebizond and Erzeroum specimens to *C. melanogaster*.—O. S.]

† Birds of Europe, Parts xxiii., xxiv.

71. Turdus merula, L. *Kara taouk* (Black fowl).

Common on the Bulgar dagh, but not seen on the Ala dagh. Again met with in the oak-scrub country beyond the steppe.

72. Turdus torquatus, L.

Flocks of Ring-Ouzels were found at Zebil during the hard weather of the early part of February. At the end of April a pair was met with on the Karanfil dagh, among a débris of loose rocks and gnarled old junipers. The elevation was about 6500 feet. From their cries of alarm and general manner of conducting themselves it was evident that they had a nest close by, though it could not be found.

73. Turdus viscivorus, L.

Common among the oak-woods, where they were found nesting. They feed chiefly on a species of mistletoe, which is very abundant in the Taurus. The leaves of this parasite and its manner of growth exactly resemble our own variety; but the berries hang in clusters, like currants, with long stalks, and are bright yellow and full of a yellow viscid juice, which often stains the feathers of the birds which feed on them.

74. Turdus pilaris, L.

Common in flocks during winter.

75. Turdus musicus, L.

Common throughout the country, except in the barren districts.

76. Petrocossyphus cyanus (L.).

This species, which winters on the coast, arrived in the mountains March 25th, and was tolerably common. It was frequently seen to take insects on the wing, and had a habit of hovering like a Flycatcher. Frequents rocky mountain-slopes up to 4500 feet elevation.

77. Monticola saxatilis (L.).

As common, and found in the same situations as the preceding. Arrived at Anascha in small flocks on March 4th.

78. Oriolus galbula, L. *Sari asma* (Yellow vine).

A few specimens were seen about the gardens of the interior. The native name refers to the golden colour of dead vine-leaves.

79. Pycnonotus xanthopygius (Ehr.).

Flocks of this bird were observed in the wooded mountains near Gozna December 11th; a week later they had disappeared.

80. Ruticilla phœnicurus (L.).

Not uncommon in gardens and wooden mountain districts throughout the country.

81. Ruticilla mesoleuca, Ehr.

Only obtained in the Taurus, where it is commoner than the preceding, but more local. The following note on this little-known species has already appeared in Mr. Dresser's work*.

The river Sihoun (Sarus), after leaving the gorge of Anascha, flows rapidly down a straight narrow valley, whose high mountain-sides are in some places huge walls of purple-grey and orange rock, and in others are clothed with the varying greens of oak, fir, spruce, and cedar. Some four miles along this valley, through willows (*Salix purpurea*), tamarisks (*Tamarix smyrnensis*), and thickets set with great whitethorns, bring one to the summer village of Kara Pongar (black spring). It is a sorry collection of a dozen huts placed on a grassy slope near the spring, which bursts in large volume from a dark ivy-hung rock, and winds down to the river through a most beautiful wood of plane and other trees. The ground here was a perfect carpet of violets and primroses, with anemones of every shade between deep purple and pure white. Further on the scenery becomes very wild, the deciduous trees cease, the rocks rise in jagged peaks, and the river tumbles away down impassable ravines.

This plane-grove is the haunt of both White-winged and Common Redstarts, the former being rather the more numerous. It is certainly much the shyer bird, perches high, drops suddenly down to the grass to feed, and flies up again at the slightest alarm. Such was the difficulty of getting at them that, although the wood held at least a dozen pairs, it took two guns a couple of days' stalking and lying in wait to bag three brace of this small game; and of these, four were killed by long flying-shots.

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* Birds of Europe, pt. liv.

The elevation of this locality is 2400 feet; and the time of observation was from 29th March to 8th April. *R. mesoleuca* occurred nowhere else in the neighbourhood of Anascha, and was not again met with until found breeding among the cedars and juuipers on the Karanfil dagh, at an elevation of at least 5000 feet. Here, on the 24th April, a pair were observed which had taken possession of an old Woodpecker's hole, about 30 feet up a dead branchless cedar. The nest was a foot lower than the entrance to it, and but just begun. Next day a nest was discovered in a natural hole, formed by the rotting away of a juniper-branch 3 feet from the ground. It contained six slightly incubated eggs; and shortly afterwards another sitting of three fresh eggs was taken from a hollow cedar still higher up the mountain. The birds of these last nests were shot.

The eggs resemble those of *R. phœnicurus* so closely, that if placed side by side with them they cannot be distinguished. The nests were loosely constructed from thin strips of inner juniper-bark interwoven with tufts of black goat's hair and a little ibex-wool, and were lined with more goat's hair and a few stray Partridge- and other feathers. The song of the White-winged Redstart is clear and pretty, and is generally uttered when the bird is perched on a tree-top or on some bare projecting branch. All the males show conspicuously the white alar patch; and the females are always more sooty on the underparts than those of *R. phœnicurus*.

82. RUTICILLA TITYS (Scop.).

Generally common, and sedentary in the mountains throughout the winter. Specimens obtained in spring are extremely dark-coloured.

83. Erithacus rubecula (L.).

Generally distributed in the wooded districts of the north and south, but not common.

84. Daulias luscinia (L.).

First met with at Develu Kara Hissar, in the gardens round the town.

85. Daulias philomela (Bechst.).

Both the present and preceding species are common about the villages of the interior, and are especially abundant in the oak-scrub districts.

86. Saxicola œnanthe (L.). *Doksandje* (The one of ninety).

First appeared at Anascha March 16th. It never became very common in that district, but was in the valleys at the base of the Ala dagh. The most numerous of the genus.

All the Chats receive the above name, from a prevailing belief that each bird collects at the close of the autumn ninety stones, which it secretes in a hole, and retiring itself therein, casts out a stone daily until the whole are gone. It then knows that winter is past, and comes out into the spring.

87. Saxicola albicollis (Vieill.).

Far less numerous than any of the other Chats found in this region, and only observed in the Taurus. First observed March 28th.

88. Saxicola melanoleuca (Güld.).

Common and well distributed in the Taurus and interior. Arrived at Anascha April 1st, and by the 10th of that month was by far the most numerous of the genus. A large series shot at that time shows great changes of coloration in the upper parts, the plumage varying between the sooty browns of the winter plumage and the pure white of the breeding-dress.

This Chat is much more arboreal in its habits than any of the others, and may often be seen perched on the very summit of a tall tree. Nests were taken from garden-walls and mud-banks, the principal building-material being grass-roots.

89. Saxicola erythræa, Ehr.

This rare species, which appears to be resident in Palestine, is certainly migratory in Asia Minor. A solitary male was shot at Zebil on February 23rd. It had probably wintered on the coast, as a similar specimen was on a former occasion procured on the rocky island of Castello Rosso, Dec. 15th.

The next appearance of the Arabian Chat was at Anascha, March 9th, one male only being seen; but the following day the bare stony ground in the valley below the village swarmed with birds of this species. A strong gale had been blowing all the night, during which they must have arrived. Among them were a few Isabelline Chats. These were much shyer than the others, with whom they were continually fighting. The pure black-and-white plumage of the males of *S. erythræa* makes them very conspicuous, and accounts in a measure for their appearing to be much more numerous than the females. They frequented both stony ground and ploughed land, and remained in the same neighbourhood from the 9th to the 18th March. After this date, with the exception of one or two seen on the barren mountain-tops, not a single bird of this kind was met with until they were found breeding in the rocky districts of the interior.

90. SAXICOLA ISABELLINA, Rüpp.

In the mountains this Chat is common and well distributed, frequenting barren ground, bushy hill-sides, and even fir-woods. Arrived March 9th. In the steppe-country it is especially abundant, far more so than any other Chat. Its notes are very peculiar, the most striking being a cry resembling that of a Sandpiper, which is uttered as the bird descends, after its hovering flight and Lark-like song.

91. COSSYPHA GUTTURALIS (Guér.).

Not observed in the Taurus, but exceedingly common in the gardens near Kaisariyeh, where it breeds in the numerous loose-stone walls by which they are divided. Also abundant in the bushy hill-districts near Chorum, but never seen in the wooded country near the Black Sea. A large series shows considerable variation in the size of the white throat-stripe, the depth of the rufous coloration of the underparts, and the extension of the black sides of the throat, which in some cases meet below, enclosing the white. It is not a shy bird during the breeding-season, and generally perches on the tops of the fruit-trees or bushes, whence it utters its sweet clear notes. Few retreats can be more congenial to a bird-lover than these gardens of an otherwise barren land, where such numbers of birds congregate, and which are at certain times of the day absolutely flooded with song. The Robin-Chat has, when undisturbed, a slow flapping flight; and the great development of the secondaries make this bird, when on the wing, appear larger than it actually is.

92. PRATINCOLA RUBICOLA (L.).

Not uncommon. A few remain in the sheltered valleys throughout the winter.

93. PRATINCOLA RUBETRA (L.).

Rare. One or two specimens were procured in the mountains during April.

94. ACCENTOR COLLARIS (Scop.).

Small flocks were met with among the cliffs near Zebil, where they fed on the minute seeds of a certain plant. Others were observed on the mountain-tops later in the year. The specimens procured are paler than the European form.

95. ACCENTOR MODULARIS (L.).

Generally distributed and resident in the Taurus, but not abundant.

96. SYLVIA NISORIA, Bechst.

Common in the bushy districts of the north and in the neighbourhood of Samsoun.

97. SYLVIA ORPHEA, Temm.

Common in the mountains, gardens, and bush-districts. First occurred at Giaour-keui April 22nd.

98. SYLVIA RUEPPELLI, Temm.

Not uncommon on the bushy mountain-sides near Anascha, where it arrived on March 25th. This graceful Warbler attracts one's notice by its habit of uttering its pretty song while hovering, Kestrel-like, in the air. At other times the males, and on all occasions the females, are hard to find, as they are fond of creeping about in the thickest parts of the bushes.

99. SYLVIA CURRUCA (L.).

Generally distributed, but most numerous in the mountains, where it was first observed April 3rd.

100. SYLVIA RUFA (Bodd.).

Rarely met with in the central districts, and never seen in mountains.

101. SYLVIA ATRICAPILLA (L.).

Rare. A female was obtained at Gozna, Dec. 18th, and a male at Giaour-keui, April 27th.

102. PHYLLOSCOPUS COLLYBITA (Vieillot).

Not uncommon in the mountain-woods.

103. PHYLLOSCOPUS TROCHILUS (L.).

Common at Anascha, where it arrived about the middle of March.

104. PHYLLOSCOPUS BONELLII (Vieillot).

Common among the oak- and fir-woods at Anascha. The first specimen was shot March 21st.

105. HYPOLAIS PALLIDA, Ehr.

Not uncommon in the interior.

106. HYPOLAIS ICTERINA (Vieillot).

Occasionally met with in the central districts.

107. ACROCEPHALUS ARUNDINACEUS (L.).

Common in the marshes near Kaisariyeh.

108. ACROCEPHALUS STREPERUS (Vieillot).

Not rare by brook-sides in the north near Mersivan.

109. BRADYPTERUS CETTI (La Marm.).

First met with at Bereketlü, at the foot of the Ala dagh, and afterwards found common in the bush-country of the interior. It frequents the banks of small streams, secreting itself in the thickest of the bushes. A series obtained shows great variation in the size of the legs and beaks and the lengths of the tarsi of specimens procured in the same locality.

110. Motacilla alba, L.

Generally common and resident.

111. Motacilla melanope, Pall.

A few were observed during the early months of the year at Zebil and Anascha.

112. Motacilla melanocephala, Gm.

Very common about the marshy districts of the interior. First met with April 30th.

113. Anthus spinoletta (L.).

Pretty numerous on the banks of the Sihoun during March. All the specimens obtained were in moult, and very ragged about the throat.

114. Anthus trivialis (L.).

Common in the woods at Anascha, where it arrived April 4.

115. Anthus pratensis (L.).

Found in flocks at Gozna and Zebil during the winter months.

116. Anthus cervinus (Pall.).

This species, which we previously found wintering on the sea-coast plains, also occurred during winter in the mountains. Some specimens were obtained on the banks of the Sihoun during March which showed no trace of the breeding-plumage; but birds shot in the barren grass-country in the beginning of May were in full summer dress. In this part of the country the Red-throated Pipit was exceedingly common.

*117. Anthus campestris (L.).

Not common, but well distributed throughout the country. A pair shot April 4th were the first of this species seen.

118. Alauda arvensis, L.

Large flocks were met with at Zebil in the beginning of January. A month later almost all had disappeared. In spring they returned and were common in the interior.

119. ALAUDA ARBOREA, L.

Common everywhere and resident.

120. ALAUDA CRISTATA (L.).

First met with in the interior May 1st. After leaving Kaisariyeh it became more common.

121. CALANDRELLA BRACHYDACTYLA (Leisl.).

Less abundant than the following.

122. CALANDRELLA MINOR (Cab.).

Exceedingly common throughout the interior.

123. MELANOCORYPHA CALANDRA (L.).

Swarms in the grassy interior. A few specimens were seen at Giaour-keui.

124. MELANOCORYPHA BIMACULATA, Ménétr.

Occurred in small flocks of three to nine in barren localities near Anascha from March 23rd to the middle of April. Larger flocks were met with at the end of the latter month at Giaour-keui; but it was never found in any other part of the country. It is very easy to distinguish this bird when on the wing from the common Calandra Lark, the present species wanting the conspicuous white line formed by the terminations of the wing-feathers of the ordinary kind.

In habits it was not shy. The birds of the small flock at first found, squatting close to the ground, and probably trusting to their resemblance to the colour of the soil, allowed one to come very near. After being fired at they would make several wide circles, uttering the while their loud clear notes, and eventually pitch again almost in the same place. Their favourite quarters were either stony earthy hillocks or fields of sprouting corn.

125. OTOCORYS PENICILLATA, Gould.

Not uncommon. Observed in flocks during winter, and subsequently met with in its breeding-quarters on the high mountain-flats and the bare hills near the Ala dagh.

126. EMBERIZA MILIARIA, L.

Very common in the mountains, and resident.

127. Emberiza citrinella, L.

Common in the Taurus during winter. As this species was also observed in the neighbourhood of Smyrna, it is strange that it has escaped the notice of the excellent observers from whose notes the bird-list of the 'Griechische Jahreszeiten' was compiled. It is there said* to be "entirely absent from Asia Minor, being replaced by *E. cirlus*."

128. Emberiza cirlus, L.

Only observed in the wooded districts near the Black Sea.

129. Emberiza cia, L.

Common and resident in the mountain-districts.

130. Emberiza hortulana, L.

Generally common. Arrived in the Ala dagh April 20th.

131. Emberiza melanocephala (Scop.).

Common in the gardens and bush-country of the interior. The song of this species is remarkedly superior to the notes of all other Buntings which we have heard.

132. Passer domesticus (L.).

Common about some villages, and absent at others. At Anascha, for example, there was not a single Sparrow, while at Jeni keui, on the opposite side of the valley, there were plenty.

133. Passer salicicola (Vieill.).

Abundant in some districts of the interior.

134. Petronia stulta (Gm.).

A small flock was once observed at Zebil in January. It was afterwards found plentiful and breeding about the villages at the base of the Ala dagh and the stony hills near Kaisariyeh.

135. Fringilla cœlebs, L.

Common everywhere.

136. Fringilla montifringilla, L.

A few were met with among flocks of the former species during the winter months.

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* 'Griechische Jahreszeiten,' Heft iii. p. 198.

137. MONTIFRINGILLA NIVALIS (L.)

It is with some hesitation that this bird is included in the present list, it having only been identified with the binocular. Still there is every probability that the birds which we met with on the summit of the Anascha Mountains really were Snow-Finches, as the species has been recorded by Canon Tristram as inhabiting Mount Hermon and the Lebanon*.

138. LIGURINUS CHLORIS (L.).

Generally distributed in the mountains, and also met with in the interior.

139. LINOTA CANNABINA (L.).

Common in spring at Anascha.

140. CARDUELIS SPINUS (L.).

Generally distributed in the Taurus, but not numerous.

141. CARDUELIS ELEGANS, Steph.

Generally common, but especially abundant in winter.

142. SERINUS HORTULANUS (Koch).

This species was not observed during winter or in the interior, but was common in the early spring among the pine-woods.

143. SERINUS PUSILLUS (Pall.).

Very common, but also very local. The following account of it has already appeared in the 'Birds of Europe'†:—

"The Kaisariyeh road diverges from the main track to Eregli at Bozanti khan, and, after crossing the river by a ford, leads up the northern side of the Ala dagh through a district at first well-wooded with fir, which soon becomes interspersed with bushes and juniper trees. The common Serin Finch had been constantly observed in other parts of the mountains, and still continued common; but it was here that the first specimen of *S. pusillus* was shot, from a small flock by the wayside. They were rather shy, and time did not admit of their being then followed up; so a long tramp from our haltingplace of Giaour keui was undertaken next day—quite unsuccessfully; for not one *S. pusillus* was seen.

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* Ibis, 1868, p. 208. † 'Birds of Europe,' pts. lv., lvi.

"The following morning an excursion was made from the above village along the banks of the Korkün river to the northward, when many flocks of the desired bird were met with, and during the rest of our stay in the Ala dagh (19th to 28th of April) it was constantly observed, both in little flocks and pairs, at elevations of from 3000 to 5000 feet. So common was it, that during a ride of eight hours from Giaour keui to Bereketlü, at least a thousand of this species must have been seen.

"It appears to breed exclusively in the juniper trees, which are here very numerous and large, and form the characteristic and, cedars excepted, almost the only tree-growth of this part of the country. The dense foliage and close contact of these trees make the nests extremely difficult to find. Birds, however, were observed building; eggs almost ready for extrusion were taken from those shot; and on the 21st April a nest containing four eggs, and declared to belong without doubt to this species, was brought in. It was taken from a juniper tolerably high up; and there seems but little reason to discredit the identification, as the bird is so common and well known to the natives, whereas the ordinary Serin is quite rare among the junipers, preferring the fir-districts.

"In a large series the colour and size of the frontal patch is the same in both sexes; but the male differs from the female in having the black of the throat deeper and extended lower down, and the general plumage more richly tinted with orange. These juniper-districts of the Ala dagh are the only localities in which the present species was found, and are evidently the breeding-quarters of vast numbers of this beautiful little Finch."

The nest is made of fine grasses, mixed with lichens and lined with dark soft feathers. Mr. Dresser, to whom it was submitted, observes that it is larger than that of the ordinary Serin, and differs considerably in general appearance, but the eggs closely resemble those of that species.

144. Pyrrhula major, Brehm.

Generally distributed in the mountains. This appears to be the large form.

145. Carpodacus erythrinus (Pall.).

Common among the copse-woods on the mountains near the Black Sea. It certainly breeds in this district; for, although the nest was not found, eggs, which would have been laid next day, were taken from some of the specimens shot. It is a tame bird, very partial to the road-sides. The males were in very fine plumage, and frequented the bushes of wild roses, then in full bloom, looking, as they sat there, not unlike roses themselves.

146. Erythrospizia sanguinea, Gould.

A few specimens were met with in the barren districts, both to the south and north of Kaisariyeh.

147. Coccothraustes vulgaris (Pall.). *Room-kush* (Greek bird).

Generally common in the mountains. Small flocks entirely composed of females were sometimes met with.

148. Sturnus vulgaris, L. *Sivrijek.*

Occurred in small flocks throughout the country.

149. Sturnus purpurascens, Gould, P. Z. S. 1868, p. 219.

A bird shot from a small flock met with to the north of Cæsarea proves to belong to this species. It is probably not rare in this district.

150. Pastor roseus, L.

Flocks were observed about some of the villages of the interior about the middle of May.

151. Pyrrhocorax alpinus (Vieill.).

Common throughout the mountains. This species consorts with *P. graculus* while feeding in the valleys, but breeds apart and much higher up. When on the Kur Mountain, at Anascha, our attention was drawn to a number of these birds which kept arriving at a certain place and disappearing in a mysterious way. On going up to the spot the reason was apparent. Among the loose stones on a small level was a roundish hole about eight feet in circumference, which went down into the solid rock. The stones all round were covered with droppings, seeds, beetles' wings, &c. On rolling down a stone a clamour of innumerable Choughs arose. Down below it seemed a perfect pandemonium with their cries and wing-flappings; none, however, ventured to come up. That night our pursuits took us further into the hills; but on returning to the same spot next day a better light showed that the sides of the hole at some distance below its mouth were artificially cut into steps; but, having no rope at hand, it was impossible to explore this curious place. Large stones were again thrown, the sounds of which, dying away in the distance, showed the hole to be of enormous depth. On this occasion the Choughs were absent, which makes it doubtful whether they use the place for breeding, or whether they go down into its depths for water. The steps point to the latter conclusion, although plenty of melted snow-water lay all about in the hollows of the rocks. The existence of this cavern, which was situated on the top of the mountain, at an elevation of about 7000 feet, was quite unknown to any of the natives.

152. PYRRHOCORAX GRACULUS (L.). *Jeeak.*

Abundant everywhere in mountainous districts of the south, where it is by far the commonest of the Corvidæ. Except in their being a little larger, specimens from Asia Minor correspond exactly with those from Western Europe.

153. CORVUS CORAX, L. *Kamas Karga.*

Generally distributed and common.

154. CORVUS CORNIX, L. *Kel Karga* (Dirty Crow).

Common everywhere, especially in cultivated districts.

155. CORVUS FRUGILEGUS, L.

Flocks were seen on the plains near Tarsus, but nowhere else.

156. CORVUS MONEDULA, L.

First met with at Iazli-tash keui, four days' journey north from Kaisariyeh. Here they were breeding, and occurred at many places on the route to the Black Sea.

157. PICA RUSTICA (Scop.).

During winter and early spring a few pairs were seen at various localities in the hills. As the barren country was approached it became much more common, and was found throughout the country in the neighbourhood of villages.

158. GARRULUS KRYNICKII, Kalenicz. *Ala Karga* (Variegated Crow).

This, the only species of Jay which we have met with in Asia Minor, is exceedingly common throughout the Taurus. A large series collected show but very trifling variations in plumage.

159. COLUMBA PALUMBUS, L.

Common in large flocks at Gozna during December, and seen at Anascha in March and April.

160. COLUMBA ŒNAS, L.

Generally distributed and common. Specimens shot at Zebil agree exactly with the ordinary type of this bird.

161. COLUMBA LIVIA, Bp.

Not uncommon in the mountains. The Asia-Minor bird has a distinctly white rump.

162. TURTUR VULGARIS, Eyton.

Very common in the interior; wherever a few trees are found they congregate.

163. PTEROCLES ARENARIUS (Pall.). *Baatluk,* or *Cadi kush* (Judge-bird).

Abundant in the barren districts of the interior, and not unfrequently met with in the mountains during its northward migration in the beginning of April. Numbers were met with to the north of Kaisariyeh as far as the fields surrounding Mersivan. Four nests, obtained during the second week of May, each contained the usual three curious-looking eggs, none of which were incubated. The Sand-Grouse were observed chiefly in the mornings, but also throughout the day, either in pairs or in small packs. Their flight is rapid and Pigeon-like, and their cry very peculiar. It seems as if this bird had some receptacle for the retention of water, as a considerable quantity of clear watery-looking fluid was observed to flow from the mouths of some specimens shot in the middle of the day, and far from any known drinking-place. A live female, which was sent to us from Tarsus, had also a peculiar power of inflating the skin of the crown and back of the head, which gave it a somewhat crested appearance. It was a very tame bird, and eat freely, but, having received breast-injuries, did not live long.

The Turkish designation of this bird seems to be of wide acceptation and considerable age, as the name *Baghirtlak* appears to have been applied to an allied member of the family, probably *Syrrhaptes paradoxus*, in the time of Marco Polo.

164. Ortygion coturnix (L.).

Observed in the interior.

165. Caccabis chukar (Gray). *Keklik* (Partridge).

Very common in the Taurus. No varieties were detected, the Cilician-killed birds being identical with specimens obtained at Rhodes and Smyrna. As the natives cannot with their long flint-guns shoot any thing flying, they generally take out with them a tame caged Partridge, who calls the wild birds to the neighbourhood of the place where the patient gunner sits ensconced among the stones and bushes. One fine old sportsman was very successful in bagging these birds. When he had found the whereabouts of a covey he advanced upon them under cover of a cotton screen, roughly painted with large spots. The Partridges, mistaking this for a leopard, ran close together, so that many fell a prey to the voluminous contents of the old man's piece. The Chukar is a great runner, and it was quite comical to see their quickness and coolness in running among the bushes before a dog; sometimes they will stop, look round, cackle, and be off again, to the great indignation of the animal in pursuit. The male is considerably larger than the female; a full-grown bird of the former sex weighs 1½ lb. That we should never in any part of Asia Minor have ever met with *Perdix cinerea* appears very

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[*] See Prejevalsky, vol. i. p. 28. Marco Polo (Yule), 2nd edit. vol. i p. 265, & ref.

singular, as it is recorded by Tchihatcheff* and other observers as common in certain places, and is mentioned by Major St. John as being found all over Andarbigan in the north of Persia†.

I have further been assured by Mr. Wilkin, the English consul at Adalia, that he has shot plenty of the common English Partridge near Isbarta, in the lake-district.

I may take this opportunity of remarking that it is extremely improbable that the specimen of *Lagopus* in the British Museum could have come from such a locality as the isolated mountain of Argæus, near Kaisariyeh. The Turkish name "Quisel" simply means "pretty," and was very probably applied to the bird, but only as an adjective. To repeated inquiries as to the existence of a white Partridge in the Taurus, negative answers were always received, excepting in one instance, and this may, if it existed, have been an albino of *C. chukar*.

166. TETRAOGALLUS CASPIUS, Gm.‡ *Ur keklik.*

Tetraogallus tauricus, Dresser, P. Z. S. 1876, p. 675.

The range of this species, though already known to be pretty wide, is not yet fully determined. Its probable western limits are the Gök, or Geyee, Mountains of Southern Asia Minor§. Thence it extends eastward through the rest of the Taurus into Armenia, Kurdistan, and Northern Persia, as far as the south-east corner of the Caspian‖. It is also reported to occur in the Dinar Mountains, in the south-west of Persia¶.

Though by no means uncommon in the rocky ranges of Cilicia, the Snow-Partridge is, owing to its extreme wariness, and the difficult character of the ground it frequents, a very hard bird to obtain. So shy is it that the natives say it takes the wind of a man like an ibex. The coveys in summer time are doubtless more easy of approach than the adult birds.

This species frequents in winter the regions just above the limits of the tree-growth, rarely descending, unless in exceptionally severe weather; and even then it usually takes to the holes and caves with which the limestone rocks abound. From the sheltered interstices of these rocks it gets its food, which at this season consists, not, as some writers say, of the droppings of the wild goats, or, as the natives often asserted, of snow and stones, but of bulbous roots, young grass-blades, moss, and quantities of the common scale-fern (*Ceterach officinarum*). The young, no doubt, after the manner of most game birds, feed much on insects. The above diet seems to agree well with these birds, as females shot March and April were covered with fat, males less so. They are good eating, more like the common Grey Partridge than any thing else. The weight of a large male was 7½ lb., that of a female 6 lb.

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* Tchihatcheff, vol. ii. p. 764.

† Eastern Persia, vol. ii. p. 273.

‡ See letter in Ibis, 1877, p. 253.

§ Kotschy, Cil. Taur. p. 95.

‖ Layard, Desc. Ruins Nineveh and Babylon.

¶ Blanford, Eastern Persia, vol. ii. p. 277.

The Snow-Partridge pairs very early, certainly as soon as the beginning of February; but it is not until the end of March that the males begin calling. The call-note is a full, clear, prolonged whistle, ended with an abrupt jerk. It is audible at a great distance, and is not difficult to imitate. The other cry which this species possesses is a loud cackle, uttered only by the male. It is begun when the bird is disturbed, and is kept up during the whole time of its flight, which is sometimes pretty long, and is best compared to that of the Ptarmigan. On alighting the performance is often wound up by a whistle. The natives imitate these notes by the syllables *luk-luk-luk-luk oooooo*. This bears about as much likeness to the natural notes of the bird as such imitations usually do on paper, which, except in the case of very simple-noted birds, appears to me to be remarkably small. The transcribing of complicated bird-notes depends so much upon the taste and fancy of the speller, that two interpretations of a bird-song very rarely coincide; and the series of syllables set down really convey no definite idea of the actual notes.

The present species begins breeding in the middle of April. Two of the three nests obtained were taken on the Bulgar dagh, April 23rd and 25th, and contained six and four eggs respectively. The other, which we had the good fortune to take ourselves on the Karanfil dagh on April 23rd, also contained six eggs.

Starting early, to escape the heat of the sun, we began to climb the north-west side of the mountain. The first part of the way was up steep slopes covered with bushes, loose stones, and a few old cedar and fir trees. By the time the foot of the rocks was reached tattered junipers were the only trees left. Here the call of a Snow-Partridge far above our heads sounded a note of encouragement. After going up a pretty good height the cry was again heard, and the sharp eyes of one of the guides made out two Ur-kekliks—a male, perched on a high piece of rock, and a female walking about below him. A stalk was attempted; but the birds discovered us, and went off with a loud defiant cackling. As they did not return, though patiently waited for, we divided our party of four, which was made up of a strapping young Turk, a celebrated sportsman called Zedi Aijlik (the seven-month's one), our servant John Ross, and myself. Agreeing to meet on the ridge of the mountain, Zedi Aijlik and myself took the right side, the others the left. While climbing laboriously up the snow-filled gullies and round the cliff-ledges the echoes of shouts sounded in the distance. Replying, we made in their direction, and reached a bay-shaped corrie, on the opposite side of which our coadjutors were perceived. The clear mountain-air enabled us to hear the good news that they had found a nest, and with considerable difficulty we joined them. It appeared that they had seen a cock bird; and while endeavouring to stalk him by clambering up a steep narrow gully, the female had flown off a small ledge close above their heads. The nest was placed on this ledge, and was sheltered by an overhanging rock, and further by the gnarled old stump of a juniper, which, no doubt, owed its existence at this elevation of 7000 feet to the very sheltered character of the position.

The nest was a deep round hollow scraped in the stony earth, and slightly lined with dry grass and a few feathers of the bird itself. It contained six eggs.

The eggs are in colour dull light clay, with a faint oil-green tinge, some darker, others lighter in ground-colour. The markings are lighter or darker red, in spots or small blotches. Some specimens are but slightly marked, others closely spotted. In size they vary from $2\frac{22}{40}$ by $1\frac{32}{40}$ to $2\frac{32}{40}$ by $1\frac{35}{40}$ inch.

The other nests, which were brought from the Bulgar-dagh, were described as being of similar construction, except that one of them was lined with bunches of green fir-needles. From general accounts it seems that six to nine is about the usual number of eggs laid; but the old chief of Anascha told us how a year or two ago a nest of seventeen eggs was brought to him. These he put under a hen; and fifteen were hatched. While young the little Ur kekliks ran about the premises like common Chickens, and as they grew older went out to the rocky hills close by, coming home every evening; but when spring arrived they all gradually disappeared, and never returned. As all the sportsmen repudiated the idea of seventeen eggs being found in one nest, it is probable that old Hadji Achmed had two layings brought to him at the same time.

Stripping some bark from the old juniper, a rough plait was made, the ends of which being turned up and tied together, formed a very decent kind of basket for our spoil. Two men were left to watch for the return of the owners of the nest; and the old sportsman and myself went up to the ridge of the mountain. Here we examined a long line of cliffs by rolling down stones. Only one hen bird was seen, which probably rose off a nest; but the place was utterly inaccessible. On rejoining our companions we found the birds had only once flown past, and had gone further on. Taking that direction home, the pair dropped suddenly off a range of rocks above us, and the male was shot. This additional good luck made the way home down the steep flowery slopes and through the thick woods seem short enough.

The large series of *T. caspius* which was obtained exhibits a few slight variations in size and colour. The general grey of the plumage is, in some specimens from the Bulgar dagh, strongly tinged with reddish fawn, while in others from the Ala dagh it is exceedingly pure. In a few males the white neck-stripes meet below; and there is a very old female which has completely assumed the male plumage.

One point which puzzles me is the etymology of the name Ur keklik. The latter part is simple enough, being the usual Turkish word for Partridge; but of the former syllable I can get no interpretation: nor does it, though universally used in connexion with the present species, appear to be a Turkish word; and it is probably in the ancient Chaldee that the signification of the word must be looked for*.

167. CHARADRIUS PLUVIALIS, L.

Flocks were observed on the plain near Tarsus in December.

168. CHARADRIUS MONGOLICUS (Pall.).

A single specimen was shot on the bare undulating plateau of the interior, May 11th.

169. CHARADRIUS CURONICUS, Gm.

Common during the end of April on the banks of the Korkun river at the foot of the Ala dagh.

170. VANELLUS CRISTATUS, Meyer.

A young bird, shot at Zebil, January 28th, was the only occurrence of this species in the Taurus. It was, however, pretty common in marshy districts further to the north.

171. GLAREOLA PRATINCOLA (L.).

Only observed at the marshes near Kaisariyeh, where it was common.

172. SCOLOPAX RUSTICULA, L. *Yelfi.*

Generally distributed in the mountains, but far less common than in the more western parts of the country.

173. SCOLOPAX GALLINAGO, L.

A few shot on the banks of the Sihoun, near Anascha, in March, were the only birds of this species seen.

174. SCOLOPAX GALLINULA, L.

As the preceding.

175. TOTANUS CALIDRIS (L.).

Found common on marshy grounds in the interior, May 13th.

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* In Hungarian Ur=gentleman, noble?

176. Totanus ochropus (L.).

A few winter in the deep sheltered ravines of the Cydnus.

177. Totanus hypoleucus (L.).

Not uncommon on the streams of the interior.

178. Otis tarda, L.

Flocks were observed at Zebil in February, and specimens obtained near Anascha on March 24th.

179. Œdicnemus crepitans, Temm.

A single bird was found in the woods at Anascha, March 5th. In the barren country it is not uncommon; and eggs were obtained at Boghaslü khan on May 10th.

180. Ardea cinerea, L.

Occasionally seen on the Sihoun.

181. Ardea purpurea, L.

A single specimen was observed near Kaisariyeh.

182. Ardea garzetta, L.

Seen at some small marshes to the north of the Ala dagh.

183. Ciconia alba (L.).

Flights of this bird passed up the Sihoun valley on March 29th; and it was found breeding on trees and old buildings in the interior. The Turks greatly respect the Stork. Near the village of Enehül is a solitary old pillar, with a Stork's nest on the top. The fabric having become top-heavy, has been supported by a neatly made framework attached to the column.

184. Ciconia nigra, Bechst.

A solitary bird was seen on the Sihoun March 18th, and large flocks on the Korkun April 21.

185. Anser, sp.

Flights of Geese passed over Zebil during winter, but at so great a height that the species could not be distinguished.

186. Anas crecca, L. *Kirki Ördek.*

Not uncommon on the rivers of the mountains.

187. Anas boschas, L. *Ördek* (Duck).

A few were seen in the mountains; and it was found common and breeding in the interior.

188. Tadorna rutila (Pall.).

Common throughout the interior. Young birds were found, on the 17th May, at Duendje.

Numbers of Terns were seen on the marsh near Kaisariyeh. We did not obtain a specimen; but they all appeared to belong to one species, probably *Sterna nigra*.

II.—*Notes on the* Trochilidæ. *The Genus* Thaumatias.

By D. G. Elliot, F.R.S.E. &c.

The genus *Thaumatias* is composed of various species of Humming-birds which have a close resemblance to each other, and possess a plumage for the most part of green and white hues—in certain species brilliantly metallic, in others rather dull in appearance. The resemblance existing between some of them has been the cause of much confusion in their nomenclature, as ornithologists, from the want of a sufficient series of specimens to assist them in forming an opinion, have been unable to discriminate the differences that really exist, and so could not satisfactorily recognize the species. The present paper, it is hoped, will, by means of the analytical table, show the characters by which the species, admitted as valid, may be distinguished without difficulty. I trust also that the review of their nomenclature may clear away some of the confusion that has existed in their synonymy, and restore in particular cases the names originally bestowed, and by which the species should be known, although these appellations have been permitted for many years to be thrust aside for others which had no claim whatever to precedence.

The genus *Thaumantias* (afterwards written *Thaumatias*) was instituted by Bonaparte in the 'Comptes Rendus,' 1850, vol. xxx. p. 382, to include the *Trochilus thaumantias*, Linn., S. N. 1766, p. 489; but as this species was already the type of Brisson's genus *Polytmus*, Bonaparte's name cannot be accepted. Mr. Gould, in his monograph, applied the term

Thaumatias to an entirely different generic form of the Trochilidæ from that indicated by Bonaparte by his type, a form for which Reichenbach had established the term *Agyrtria*, with *Ornismyia brevirostris*, Less., for its type; and in future, therefore, the birds reviewed in this paper should be classed in Reichenbach's genus, with *Thaumatias*, Gould (nec Bon.), as its synonym *Thaumantias*, Bon., becoming a synonym of *Polytmus*, Brisson*.

The sexes of the members of this genus are alike in plumage, except in the case of *T. chionurus*, the female of which varies in a slight degree from the male; and it is probable that in a final classification of this family this species may appropriately be removed into another genus. I did at one time refer to *Thaumatias* two birds described by my friend Mr. G. N. Lawrence as *Eupherusa cupreiceps* and *E. nigriventris* (Ann. & Mag. Nat. Hist. ser. 4. vol. viii. p. 267, 1871); but I believe they are better placed in a genus by themselves, as has been done by M. Mulsant in his 'Histoire Naturelle des Oiseaux-mouches,' as in several particulars they differ from the genera with which they have been associated. I am able to recognize twenty-one species (one perhaps doubtful) belonging to the genus *Thaumatias*, and have divided them into three groups, characterized by the coloration of their throats and breasts. The first of these contains two subdivisions, distinguished from each other by the degree of brilliancy observed on the top of the head. The second group contains three subdivisions, characterized by the coloration of the under tail-coverts. One of the chief specific characters among the members of the various groups appears to be the coloration of the rectrices, which, in the majority of cases, permits the species to be determined without much difficulty. Six species have brilliant metallic crowns, varying somewhat in the extent of the dispersion of the hues towards, or upon, the occiput; three have this part only slightly metallic; one has both crown and face covered with glittering feathers; while the remaining species, nine in all, have the crown dull in appearance, metallic hues showing in only a very limited degree, even in strong lights. The genus is closely allied to *Cyanomyia*; but I do not agree with M. Mulsant in placing such species as *T. milleri*, *T. chionopectus*, *T. viridiceps*, *T. leucogaster*, and *T. candidus* in the genus *Cyanomyia*, nor in subdividing the last-named genus into two subgenera on account of the hues of their plumage. In my opinion, *colour alone* should never be made a character for establishing a genus in ornithology, especially among the Trochilidæ, the species of which vary so notoriously in the different shades of their plumage; and for the same reason I do not accept the term *Leucolia*, given to certain members of the genus *Thaumatias*.

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* [This view of the type of *Thaumantias*, Bp., we cannot agree to; for it is evident from the Consp. Av. (p. 78) that *T. thaumantias*, Linn., apud Bp. = *T. albiventris*, Less., and therefore = *T. tephrocephalus*, Vieill., apud Elliot (infrà, p. 48). Thus considered, Mr. Gould is correct in his application of Bonaparte's name *Thaumantias*.—Edd.]

The following analytical table will exhibit the more prominent characters of the species of *Thaumatias*:—

A. Throat and breast white.
- a. Top of head brilliantly metallic.
  - *a'*. Bill black.
    - 1. Tail purplish bronze .... 1. *T. chionopectus.*
  - *b'*. Bill—maxilla black, mandible flesh-colour, tip black.
    - 1. Tail steel-black, median feathers greenish bronze .... 2. *T. leucogaster.*
    - 2. Tail greenish grey, barred with brown near tip; bill long, stout .... 3. *T. viridiceps.*
    - 3. Tail greenish grey, subterminal bar dark brown; bill short, weak .... 4. *T. milleri.*
- b. Top of head slightly metallic.
  - *a'*. Entire abdomen white.
    - 1. Tail greenish bronze, with a subterminal dark brown bar .... 5. *T. candidus.*
  - *b'*. Abdomen and flanks pale rufous .... 6. *T. norrisi.*
  - *c'*. Centre of abdomen white.
    - 1. Tail pale bronze-green, barred with brown, tipped with dusky .... 7. *T. brevirostris.*
    - 2. Tail blue-black .... 8. *T. compsa.*

B. Throat and breast metallic green.
- a. Crown of head dull green.
  - *a'*. Under tail-coverts pure white.
    - 1. Rectrices steel-black, median ones slightly tinged with green in certain lights .. 9. *T. nigricauda.*
    - 2. Median pair of rectrices golden green,

remaining ones have inner webs, except tips, black, outer webs metallic golden green; all lateral feathers tipped with bright metallic golden green .... 10. *T. nitidicauda?*

3. Central pair of rectrices bronze-green, lateral ones white, apical portion black . 11. *T. chionurus.*

b′. Under tail-coverts white, with central brown or green streaks.

1. Median rectrices, except tips, and the basal portion of the others bright green; central part of lateral ones blackish, tips grey. Throat and breast shining grass-green........................ 12. *T. tephrocephalus.*

2. Median rectrices bronze-green, remainder black, with pale tips. Throat and breast golden green .... 13. *T. tobaci.*

3. Tail black. Throat and breast grass-green, with a slight bluish tinge............ 14. *T. fluviatilis.*

4. Median rectrices green, tipped with black, rest black, tipped with white. Throat and breast bright golden green ...... 15. *T. apicalis.*

5. Median rectrices green, tipped with black, next one on either side bronze-green two thirds their length, rest black; remaining feathers green at base, then black, with a metallic green spot on the tip, which graduates into white on its upper edge........................ 16. *T. maculicauda.*

6. Tail bronze-green, lateral feathers with a subterminal purplish bronze bar, tips ashy grey. Throat and breast glittering bluish green..................... 17. *T. luciæ.*

c′. Under tail-coverts grey, with a central line of bronze-green.

1. Crown of head and face glittering green.. 18. *T. nitidifrons.*

2. Crown of head and back of neck shining greenish blue .... 19. *T. cæruleiceps.*

C. Throat and upper part of breast blue.

a. Tail pale greenish bronze, with a subterminal blackish bar .... 20. *T. neglectus.*

b. Tail steel-black .... 21. *T. bartletti.*

The members of this genus have a rather extensive geographical dispersion, ranging from and including Mexico in the north, through Central America, down the Andes of South America as far as Bolivia, and along the northern side of the continent into Venezuela (and some of the islands lying contiguous to it), Guiana, and Brazil as far south as Rio Janeiro. To review rapidly the distribution of the species acknowledged as such in this paper, and commencing at the most northern limit, we find that *T. candidus* is an inhabitant of Southern Mexico, and ranges through Guatemala into Honduras, which country appears to be its southern boundary. In British Honduras also *T. luciæ* has been procured. In Costa Rica the beautiful *T. chionurus* is found, and is evidently very common in Veragua and Chiriqui. Proceeding southward we come to Columbia, which possesses more species of this genus than any other country. *T. milleri* is common in the vicinity of Bogota, and is said to extend its range into the interior towards the head-waters of the Rio Negro. From Bogota has also been received the unique specimen called by Mr. Gould *T. cæruleiceps,* and also the rare species *T. apicalis* of the same author. *T. tobaci* has been obtained here, and also *T. leucogaster,* described as *terpna,* if I am correct in referring Dr. Cabanis's bird to that species. Continuing south we find that Ecuador possesses but one representative of this genus, *T. viridiceps,* closely resembling *T. milleri,* and differing principally in its larger size. Peru contains two species—the *T. fluviatilis,* dwelling on the Rio Napo, the Upper Ucayali, and also in the vicinity of Pebas, and the rare *T. bartletti,* discovered on the Upper Ucayali by the collector whose name it bears. Bolivia, the most southern of the countries on this side in which any species of *Thaumatias* is found, is the home of *T. neglectus,* brought by D'Orbigny from Yungas and Moxos. Returning now to the northern part of the continent, and commencing with Venezuela, we find that *T. chionopectus* has been procured near Merida (whence it was sent by Mr. Goering), this species also ranging into Guiana and the island of Trinidad. *T. tobaci* is also a native of Venezuela, and has been procured in the islands of Tobago and Trinidad. It continues its range through Guiana as far south as Para; and as it has also been obtained in Columbia, the probability is that it is an inhabitant of the valley of the Amazons throughout its whole extent, passing from the head-waters of the affluents of this mighty river into the vicinity of Bogota. *T. nitidifrons* has been given as a native of Venezuela; but the locality from which the few known specimens came has not been ascertained, and it can be deemed only a conjecture that this country is its habitat. Trinidad, besides the species named, also contains the bird I have called in this paper *T. nigricauda,* which apparently ranges along the coast to Bahia; but its precise continental dispersion I do not know. From British Guiana Mr. Gould obtained the bird named by him *T. maculicauda*; and from some part of the same country was received *T. compsa*; but the precise range of both is unknown. From Cayenne comes the bird I have named provisionally *T. nitidicauda*; but how far it is distributed, or in what precise direction, I am unable to say. Brazil, the last country that claims our attention for the birds of this genus, is the habitat, besides those already mentioned, of *T. tephrocephalus,* which inhabits the delta of the Amazons; and, lastly, *T. brevirostris* is found in the province of Minas Geraes and the vicinity of Rio Janeiro.

In reviewing the various species, I have followed the arrangement given in the analytical table; and commencing with the group having a white throat and breast, the first species that presents itself is

1. THAUMATIAS CHIONOPECTUS.

Ornismya albirostris, Lesson, Hist. Nat. Ois.-Mouch. p. 212, pl. 78.

Thaumatias chionopectus, Gould, Mon. Troch. v. pl. 293; id. Intr. Mon. Troch. 8vo ed. p. 152.

Hab. Trinidad, Cayenne, Guiana, Venezuela (*Goering*).

Lesson undoubtedly had this species before him when he described his *Ornismya albirostris* (*l. c.*); but why he stated the mandible to be *white* it is difficult to explain. The supposition of Mr. Gould that Lesson described from a made-up specimen, with the head and body of *Thaumatias leucogaster* and the tail of *T. chionopectus,* might be correct, if the species were rare; but as Lesson states that it "n'est pas rare dans les collections," he probably had more than one example before him, and a made-up bird must have been detected, as the tails of the two species in question are too conspicuously different, and the plumage of the body also, for any one to be deceived by a manufactured specimen. There is another reason also against Mr. Gould's supposition: viz., it is quite evident Lesson did not have the body of *T. leucogaster* before him; for in his description he says, "toutes les parties supérieures d'un *vert doré* uniforme," which certainly does not apply to *T. leucogaster*, which has this portion grass-green instead of golden green. The difficulty, however, is in the bill; and as Lesson both figures the mandible as white, and emphasizes this by calling the bird *albirostris*, it would seem to be best to reject his name and adopt that of Mr. Gould, *chionopectus*; for of all the species composing the group with the throat and breast white, the present is the only one that has an entirely black bill, and the name *albirostris* would therefore be in the highest degree inapplicable to it. The species is generally met with in all collections of birds of this family, as it is sent to Europe in considerable numbers, being very common in the localities it frequents.

I have a specimen of this bird obtained by Mr. Goering, near Merida, Venezuela.

2. THAUMATIAS LEUCOGASTER.

Trochilus leucogaster, Gmel. Syst. Nat. tom. i. p. 495.

Thaumatias leucogaster, Gould, Mon. Troch. v. pl. 294; id. Intr. Mon. Troch. 8vo ed. p. 152.

Agyrtria terpna, Heine, Journ. für. Ornith. 1863, p. 184?

Hab. Brazil, Cayenne, Bogota? (*Lindig*).

Brisson was apparently the first to give a comprehensive Latin description of this species, under the name of *Mellisuga cayennensis ventre albo*, which Gmelin supplanted by *Trochilus leucogaster* (*l. c.*), accepted since his time by ornithologists generally. It is easily recognized among the members of the group in which I have placed it by its steel-black tail, which renders it conspicuously different from all its relatives. It is apparently confined in its range to

Cayenne, Guiana, and Brazil as far south as Bahia. Hr. Heine has described a bird, from the neighbourhood of Bogota, brought by M. Lindig, and called it *Agyrtria terpna* (*l. c.*). I am not acquainted autoptically with it; but I cannot perceive any thing in the description to separate it from *T. leucogaster*: and I have placed its name among the synonyms of the present species with a mark of doubt; for of course I do not pretend to form any definite opinion until I have had an opportunity of examining the type. The measurements given are the same as those of *T. leucogaster*; and the two birds seem to have the same black tail, which is one of the chief specific characters of *T. leucogaster* among the members of the group to which it belongs. If I am right in placing Hr. Heine's bird with the present species, its range must be extended over the whole northern part of South America from east to west.

3. THAUMATIAS VIRIDICEPS.

Thaumatias viridiceps, Gould, P. Z. S. 1860, p. 307; id. Mon. Troch. v. pl. 295; id. Intr. Mon. Troch. 8vo ed. p. 152.

Hab. Ecuador, Citado (*Buckley*).

This is a very distinct species, and, although bearing a close resemblance to *T. milleri*, is easily distinguished from it by its much larger size and the long strong bill. It was described by Mr. Gould (*l. c.*) from specimens received from Quito. Its exact range in Ecuador has not been ascertained.

4. THAUMATIAS MILLERI.

Trochilus milleri, Bourc. P. Z. S. 1847, p. 43.

Thaumatias milleri, Gould, Mon. Troch. v. pl. 296; id. Intr. Mon. Troch. 8vo ed. p. 152.

Hab. Columbia.

This species, a diminutive form of *T. viridiceps*, was described by Bourcier (*l. c.*) from a specimen in the collection of the late Mr. Loddiges. In the examples before me, belonging to my own collection, there is a great difference in the colour of the tail, which in some is greenish grey, like that of *T. viridiceps*, in others is bronze-red. Four specimens have the tails, and also the feathers of the back, of this colour, presenting a very different appearance from the colder green back and grey tail of the typical style of this species. Two of these red-tail specimens are males, with brilliant heads; the others, possibly females, have bronzy red heads, the same colour as the tail, but with very little metallic lustre, rather dull in fact. The colour of the heads of the males is golden green, and not grass-green, like typical *T. milleri*. I do not remember ever having seen these differences between examples of this species referred to by any ornithologist; and, although they are very great, sufficient to constitute a well-marked race, if not a species, yet, mindful of the manner in which birds of this family vary in coloration, I hesitate to regard this red form as distinct, until at least more ample materials are available for comparison, and an increased knowledge of the species may enable us to determine the range of the two styles, and to ascertain if they have a different dispersion.

I obtained my red specimens from M. Bourcier; and they are marked as coming from "New Granada."

5. THAUMATIAS CANDIDUS.

Trochilus candidus, Bourc. & Muls. Ann. Sci. Phys. et Agricul. Lyon, 1846, p. 326.

Thaumatias candidus, Gould, Intr. Mon. Troch. 8vo ed. p. 151; id. Mon. Troch. v. pl. 292.

Hab. Guatemala (*Salvin*), Mexico (*Sallé*), Honduras (*Taylor*).

This well-known and rather plainly attired species was described by MM. Bourcier and Mulsant (*l. c.*) from a specimen obtained at Coban, in Guatemala. It is not an uncommon bird in Southern Mexico and Guatemala, in which countries numerous specimens have been procured by Messrs. Sallé and Salvin respectively. In Honduras it was observed by Mr. Taylor, but not in any great numbers; and I believe this country is the southern limit of its range. In the vicinity of Coban this species appears to be more numerous than elsewhere.

6. THAUMATIAS NORRISI.

Trochilus norrisi, Bourc. P. Z. S. 1847, p. 47.

Thaumatias lerdi, De Oca, La Naturaleza, tom. iii. p. 24, fig. 7.

Hab. Bolanos, Mexico (*Gould*).

I place this species in the genus *Thaumatias*; for if this may not be actually its proper place, I know of no more appropriate one. It evidently has very little to do with *Hemistilbon,* as represented by *H. ocai,* which is very closely allied to *Amazilia,* and which should probably be allowed to remain in that genus. Señ. De Oca (*l. c.*) has described a Humming-bird, which he saw in a collection in Mexico, as *Thaumatias lerdi*; and, judging from his figure and description, I believe it to be the same as *T. norrisi,* Bourcier. It is unquestionably a *Thaumatias,* and is distinguished from *T. candidus,* to which it seems most nearly allied, by the throat and sides of the neck covered with metallic golden green feathers, and abdomen and flanks pale rufous, which are the chief specific characteristics of *T. norrisi.* In other respects it resembles very closely *T. candidus.*

7. THAUMATIAS BREVIROSTRIS.

Ornismya brevirostris, Less. Hist. Nat. Ois.-Mouch. pp. xxxv, 211, pl. 77.

Thaumatias brevirostris, Gould, Mon. Troch. v. pl. 298; id. Intr. Mon. Troch. 8vo ed. p. 152.

Thaumatias affinis, Gould, Mon. Troch. v. pl. 299; id. Intr. Mon. Troch. 8vo ed. p. 153.

Hab. Brazil, vicinity of Rio Janeiro, and province of Minas Geraes.

Lesson described and figured this species as quoted above, and stated that it came from Guiana, which was an error, as it is not found in that country, but is a native of Southern Brazil. It is one of the smallest members of the white-throated group of this genus, and has the sides of the throat and breast more covered with metallic green than is the case with any of its relatives of the same section. Indeed the white is displayed in the shape of a narrow white line running from the chin to the breast; and in some specimens the green feathers encroach upon the throat, only permitting the white to appear in spots. This last style Mr. Gould has described as distinct in his monograph of the Trochilidæ under the name of *affinis*. He says that Mr. Reeves, of Rio Janeiro, called his attention to the bird, and stated that it had a different note from *T. brevirostris*, and placed its nest in a different situation, although what that was he did not inform us. Judging from the skins, of which I have a series before me from the vicinity of Rio Janeiro, as well as the province of Minas Geraes, I can perceive no difference whatever that in my opinion should constitute them distinct species. The extent of white on the throat varies considerably among the specimens; and in some from the vicinity of Rio the throat is quite as fully covered with green feathers as are those of specimens from Minas Geraes, while all before me from that province exhibit some white upon the throat, and do not have this part entirely uniform green, as represented in the figures of Mr. Gould's plate, which therefore is, I think, rather apt to mislead in this respect. In his comparison of *T. brevirostris* and *T. affinis*, Mr. Gould says that the latter is "altogether more delicately formed than the *T. brevirostris*; has an almost uniform pale green tail, and a breast without the slightest appearance of white in the centre." In size the birds from the two localities appear to me to be exactly alike; and I cannot perceive any appreciable difference in the colour of the tails. I have never seen an example with an entirely uniform green throat, all the specimens observed by me, from every locality, having some trace of white amongst the green. I may add that among my examples are some from Minas Geraes, named *T. affinis*, and others from the vicinity of Rio, marked *T. brevirostris*, obtained from Mr. Gould, between which no difference whatever exists in coloration. I have no hesitation in placing *T. affinis* among the synonyms of *T. brevirostris*.

8. THAUMATIAS COMPSA.

Agyrtria mellisuga, Cab. & Heine, Mus. Hein. Th. iii. p. 34. sp. 71.

Agyrtria compsa, Heine, Jour. für Ornith. 1863, p. 185, sp. 19.

Hab. Guiana.

This is, apparently, a very distinct species; but I am not autoptically acquainted with it. The authors of the 'Museum Heineanum,' referred it to the *Trochilus mellisugus,* Linn.; but Hr. Heine afterwards described it as distinct under the name of *compsa* (*l. c.*). Although allied to *T. brevirostris,* it can easily be distinguished by the blackish-blue tail, that of the other species being bronze-green, and also by the under tail-coverts, which are said to be shining green (uniform?), those of *T. brevirostris* being dull green margined broadly with white. Hrn. Cabanis and Heine state that it is smaller than *T. brevirostris,* with a longer bill. Dimensions of this kind among birds of this family are not, however, of much specific importance; and the bird will probably establish its claim to a separate rank, chiefly, I imagine, by the colour of the tail, a rather unusual one for a species belonging to the group in which it finds its place.

I have had for a long time a Humming-bird belonging to this genus, which seems to have escaped the notice of ornithologists, or else to have been confounded with some other species. It is not unfrequently met with in collections; but I have been entirely unsuccessful in finding any published name for it. I have a series of specimens from Trinidad, British Guiana, and Cayenne; and I have also seen an example in Graf von Berlepsch's collection, the locality of which was stated to be Bahia. This would seem to give the species a rather extensive range along the eastern coast of South America. Belonging to the second group into which I have divided the genus, in the subdivision with white under tail-coverts, this species differs from all the other members of the genus in having, together with pure white under tail-coverts, the entire tail a deep blue-black, the median rectrices having but the faintest tinge of green only in certain lights, and the lateral tail-feathers edged with white at their tips. I propose to call this species, having no recorded name by which to designate it,

9. Thaumatias nigricauda, sp. nov.

Top of head dull green; nape and back shining grass-green. Throat and upper part of breast bright metallic grass-green; flanks dark purplish brown, each feather tipped with metallic grass green; but the general appearance of the flanks is much duller and darker than the breast, which lies above them like a shield. Centre of abdomen, thighs, and under tail-coverts pure white. Upper tail-coverts like the back, but with a purple tinge. Tail has the two median rectrices black, with a very slight tinge of green in some lights, remainder blue-black, edged with white on their tips. Wings purple. Bill—maxilla black, mandible flesh-colour, tip black. Total length 3½ inches, wing 2, tail 1½, bill ⅝.

Hab. Trinidad, British Guiana (*Verreaux*); Cayenne (*Verreaux*); Bahia (*Berlepsch*).

There is a Humming-bird from Cayenne which bears some resemblance to the *T. tephrocephalus*, but is smaller and more delicately shaped, has a differently coloured tail and white under tail-coverts. I have seen a fair number of specimens all resembling each other; and although I cannot place them satisfactorily with any of the described species of *Thaumatias*, yet I hardly feel myself authorized to definitely give them a new name with only my present materials to judge from. I will point out the differences perceived by me, which perhaps may assist some ornithologist with a good series of specimens at his command to determine the proper place the bird should occupy. The breast and throat are a more golden green than that part of *T. tephrocephalus*; but the chief characters which seem to separate them are the colour of the under tail-coverts and shape and colour of the rectrices. In the Cayenne bird the tail-feathers are narrow and slender, the median pair are golden green for their entire length, the remaining feathers have the entire inner webs, except the tips, black; the outer webs are metallic golden green, this hue not extending the entire length of the web on the outermost feather, which is black on both webs below the tip. All the lateral rectrices are conspicuously tipped with bright metallic golden green. The bill is red, tip black. This bird is about the size of *T. tobaci*, but the tails of the two are entirely different. I have compared it also with the type of *T. maculicauda*, and find the tail-feathers are about the same width and length as the rectrices of that species; and in certain points of coloration the two resemble each other more closely than any of the other members of this genus; but I do not think they belong to the same species. Should the bird eventually be ascertained to be distinct, it might be known as 10. *Thaumatias nitidicauda.*

11. THAUMATIAS CHIONURUS.

Thaumatias chionurus, Gould, Mon. Troch. v. pl. 300; id. Intr. Mon. Troch. 8vo ed. p. 153.

Hab. Costa Rica.

This pretty species, first described by Gould (*l. c.*), is a native of Costa Rica. In the colouring of the tail it differs greatly from all the species of *Thaumatias*, so much so that the term *Elvira*, proposed for it by M. E. Mulsant, does not seem to be altogether needless. A slight difference in the coloration of the sexes also separates it from the members of this genus. For the present, however, I retain it among the species of *Thaumatias*. There is no difficulty with its synonymy; and it cannot be confounded with any of its relatives.

12. THAUMATIAS TEPHROCEPHALUS.

Trochilus tephrocephalus, Vieill. Nouv. Dict. Hist. Nat. xxii. p. 439 (1818).

Ornismya albiventris, Less. Hist. Nat. Ois.-Mouch. p. 209, pl. 76.

Thaumatias albiventris, Gould, Mon. Troch. v. pl. 301; id. Intr. Mon. Troch. 8vo ed. p. 153.

Hab. Brazil, Santa Catherina (*Bourcier*); Delta of the Amazon (*Gould*).

Mr. Gould, in his monograph, gives as a reason for adopting Lesson's name of *O. albiventris* for this species, that M. Bourcier told him Vieillot's type of *T. tephrocephalus* "was in a very bad state, and the feathers of the head much worn and faded, and presenting a grey appearance, which doubtless suggested the appellation Vieillot assigned to it, and which, being intended to express a feature that does not exist, must give place to that of *albiventris*, applied to it by M. Lesson." This style of reasoning may be correct; but that one naturalist is at liberty to ignore a name given to a species simply because *he* considers it inappropriate, is not, I think, acknowledged generally by authors at the present time. Besides, the facts are rather against M. Bourcier's statement, as it seems to me. I have examined Vieillot's type of *T. tephrocephalus*, which is still in the Paris Museum, and it appeared to be in a very good condition. The crown is somewhat faded, it is true, but not more so than is perhaps to be expected in a specimen exposed to the light for so many years as this has been. Yet it is easily perceived that the original colour was the same as that of examples more recently procured. Vieillot's name is, therefore, without doubt, the rightful one for the species to bear, and Lesson's must become a synonym, a position it should have always occupied.

I cannot see any difference in the plumage of the sexes of this species.

13. THAUMATIAS TOBACI.

Tobago Humming-bird, Lath. Gen. Syn. vol. i. p. 781 (1783).

Trochilus tobaci, Gmel. Syst. Nat. vol. i. p. 498 (1788).

Ornismya viridissima, Less. Hist. Nat. Ois.-Mouch. p. 207, pl. 75.

Thaumatias linnæi, Gould, Mon. Troch. vol. v. pl. 302; id. Intr. Mon. Troch. 8vo ed. p. 153.

Hab. Tobago, Trinidad, Cayenne, Venezuela, Columbia, Brazil.

The proper specific name for this species has always apparently been a matter of conjecture; and most writers have used *linnæi*, under which it was published by Mr. Gould in his monograph of the family. So far as I am able to discover, the above synonyms properly disclose the more important progressive steps taken by authors to bestow a name upon this unfortunate little bird, and I propose to take them in the order given. Latham describes, in his 'General Synopsis' (*l. c.*), a Humming-bird, which he states he received from Tobago, as follows :—"Length four inches. Bill three quarters; colour dusky; the under mandible yellow, except at the tip: head, neck, back as far as the middle, and beneath as far as the belly, glossy green: lower part of the back, rump, and wing-coverts green, glossed with copper: across the lower part of the belly a white bar: thighs white: vent and under tail-coverts very pale brown: quills and tail blue-black, the last somewhat forked: legs black." This answers excellently for the present species, the chief discrepancy being the colour of the under tail-coverts, which in the adult are white, streaked with brown. The locality given is also correct, being one of those in which the *T. linnæi*, Gould, is found. To this bird of Latham, Gmelin, in his 'Systema Naturæ,' gave the name of *tobaci*, changed afterwards by Latham, in his 'Index Ornithologicus,' to *tobagensis*. In 1829, Lesson (*l. c.*) described and figured the species as *Ornismya viridissima*. Mr. Gould, in his monograph (*l. c.*), calls the bird *T. linnæi*, after the name, as he states, proposed for it by Bonaparte in the 'Revue et Magasin de Zoologie,' 1854, p. 255. In the article thus referred to (the "Conspectus Trochilorum"), under the genus *Thaumantias*, Bonaparte refers his *linnæi* (no. 245) to *Trochilus thaumantias*, Linn. Now the *T. thaumantias* of Linnæus is not a *Thaumatias* at all, but the *Polytmus virescens*, auct. (Linnæus's name having been made into a genus, his species required a new one). Of this term the *linnæi* of Bonaparte would be a synonym; and therefore M. Bourcier, who is responsible for the synonymy of *T. tobaci* in Mr. Gould's work, was clearly in error in applying Bonaparte's name to it. If Gmelin's appellation did not have the priority, *viridissima* of Lesson would be the rightful one for the species, Bourcier's objection, advanced by Mr. Gould, that the same specific name may not be applied to two birds belonging to the same family, even if of different genera, being untenable.

T. tobaci is a species of rather extensive range, as it has been obtained in Tobago, Trinidad, Guiana, Venezuela, Northern Brazil, and, as stated by Mr. Gould, in the vicinity of

Bogota. From this last locality Mr. Gould has received specimens presenting no differences from eastern examples, save a trifling increase in the length of the bill and a slight tipping of white to the tail-feathers. *T. tobaci* can be recognized from its near ally, *T. tephrocephalus*, by the colour of its tail, the lateral feathers of which are black, with pale tips.

14. THAUMATIAS FLUVIATILIS.

Thaumatias fluviatilis, Gould, Intr. Mon. Troch. 8vo ed. p. 154.

Hab. Rio Napo, Pebas, Peru.

This rather rare species was described by Mr. Gould as above from specimens obtained on the Rio Napo. It has also been procured at Pebas by Mr. Hauxwell. It differs from its near relatives in the deep grass-green, with a slight bluish tinge, of its under surface (deeper in colour even than in *T. nigricauda*, although of a similar shade), also in the under tail-coverts, which are brown, margined with white. It is apparently not uncommon in the localities it frequents.

15. THAUMATIAS APICALIS.

Thaumatias apicalis, Gould, Intr. Mon. Troch. 8vo ed. p. 154.

Hab. Columbia.

This appears to be a rare species. I have only seen the specimens contained in Mr. Gould's collection and my own. It has a very long bill, and the tail is similar to that of the bird I have called *T. nigricauda*; but the median feathers are bright green for two thirds their length, and then black. Mr. Gould states that the under tail-coverts are pure white. When together they appear so, but on separating them it is perceived that their centres are blackish brown, the remaining portions being white.

16. THAUMATIAS MACULICAUDA.

Thaumatias maculicauda, Gould, Intr. Mon. Troch. 8vo ed. p. 154.

Hab. British Guiana.

Mr. Gould has, with his usual kindness, placed in my hands, for examination and comparison, the type of the present species. It is a small bird, and, as stated by its describer, has a peculiarly coloured tail, quite different from any other species with which I am acquainted, although most nearly resembling, as I have already stated, the bird I have provisionally called *Thaumatias nitidicauda*. I believe the type is unique.

17. THAUMATIAS LUCIÆ.

Thaumatias luciæ, Lawr. Proc. Acad. Nat. Sci. Phil. 1867, p. 233.

Hab. Honduras.

I do not know this species autoptically. It was described by Mr. Lawrence (*l. c.*) from a single specimen contained in a collection of birds formed in various parts of Central America; and the type, which is in the National Museum at Washington, remains, I believe, unique. Mr. Lawrence says that in size and colour of body it is much like *T. linnæi* (*T. tobaci*); but the tail is quite different, and closely resembles in the colouring of its under surface that of *T. chionopectus*.

18. THAUMATIAS NITIDIFRONS.

Thaumatias nitidifrons, Gould, P. Z. S. 1860, p. 308; id. Mon. Troch. vol. v. pl. 297; id. Intr. Mon. Troch. 8vo ed. p. 152.

Hab. Venezuela?

This is a very distinct and rare species. Besides Mr. Gould's type I have seen but one other, now in the collection of Count Turati, at Milan. In its glittering crown and breast it is conspicuously different from all the members of this genus, being the only one that has both these parts clothed in metallic colours. Its habitat is not yet known.

19. THAUMATIAS CÆRULEICEPS.

Thaumatias cæruleiceps, Gould, P. Z. S. 1860, p. 307; id. Intr. Mon. Troch. 8vo ed. p. 152.

Hab. Columbia.

I am indebted to Mr. Gould for the opportunity of examining this bird, the type of which is now before me, having been kindly lent to me by its describer. It represents, in my opinion, a very distinct as well as beautiful species of this genus, resembling *T. milleri* in its upper parts, but, on account of having the throat and breast green, it cannot be even placed in the same group with that bird. In its rectrices it also exhibits differences of coloration not seen in any other species, the entire tail being of a light bronze-green, darkest on the median pair of rectrices, graduating to a pale green at the tips, and without the subterminal brown bar observed in most of the species with light tails. The bill is long and slender; maxilla black, mandible flesh-colour, tip brownish black. I believe the type is unique, although it is now a long time since it was described, and the acquisition of other specimens is much to be desired.

20. THAUMATIAS NEGLECTUS.

Thaumatias neglectus, Elliot, Ibis, 1877, p. 140.

Hab. Yungas and Moxos, Bolivia.

This species, lately described by me in this Journal, together with the following one, constitute the third section of this genus, with the throat and upper part of breast blue. It was discovered by D'Orbigny, and the types, which are unique, are in the Paris Museum. When perfect specimens are obtained it will doubtless prove to be one of the most beautiful members of the genus to which it belongs.

21. THAUMATIAS BARTLETTI.

Thaumatias bartletti, Gould; Sclat. & Salv. P. Z. S. 1866, p. 194.

Hab. Peru.

This fine species was obtained by Mr. Bartlett on the Upper Ucayali, in Peru. It is remarkable for having the throat and breast a violet-blue, instead of green. The few specimens brought by its discoverer are the only ones, so far as I am aware, that have ever reached Europe; and in collections this bird is very rare and in many cases a desideratum.

III.—*Remarks on certain Species of the* Corvidæ *and* Paradiseidæ, *with a Description of an apparently new Species of* Cyanocorax. By D. G. Elliot, F.R.S.E. &c.

In the lately published third volume of his 'Catalogue of Birds' (p. 317 *et seqq.*), Mr. Sharpe has acknowledged three species of the genus *Platylophus*, as follows:—*P. galericulatus* (Cuv.), from Java, with a jet-black plumage; *P. ardesiacus*, Cab., from the Malayan peninsula, with a slaty black plumage (back inclining to olive-brown, beneath slaty grey); and *P. coronatus* (Raffles), from Sumatra and Borneo, with a rufous-brown plumage. Cuvier (who evidently named the bird from Levaillant's figure) and Vieillot (who gave a short description of it in the same year, under Cuvier's name) apparently had never seen the species, and their type specimens, if existing, are not known. Having had occasion lately to investigate a portion of the Corvidæ, my attention was drawn to the specimens in the Paris Museum which served as the types of Lesson's *Vanga galericulata*, which he refers to Cuvier's *Garrulus galericulatus*, and the result of my examination is as follows:—There are two examples, representing male and female, both brought from Java by M. Diard in 1821. The male is in the black dress characteristic of *P. galericulatus*, Cuv., but is not in fully adult plumage, as I perceive by comparison with another male, also from Java, brought to the museum in 1861 by M. Steenstra. Lesson's bird has the greater coverts, primaries, and secondaries greyish brown on the outer webs, while this part in the adult is dark purplish brown. The back is also inclined to a greyish hue. In other respects it resembles M. Steenstra's adult specimen, though not quite so black in any part of its plumage.

The female of Lesson's example (so marked by its collector) has the wings and body rufous and the tail slaty black, and is in the style called *Lanius coronatus* by Raffles. Two young males in the museum from Malăcca are intermediate between these type specimens, having rufous wings, a greyish back, and slate-grey beneath, and many of the feathers tipped with white. This is the style termed *P. ardesiacus* by Cabanis; but the examples are so evidently only young males of *P. galericulatus* that there could be no hesitation in deciding the point, even if the indication of their sex had not been given by the collector. In fact these five specimens present a complete graduation of plumage from that of the female to the adult male. It seems therefore very clear to my mind that there is only one species of *Platylophus*, viz. *P. galericulatus* (Cuv.), of which the so-called *P. coronatus* is the female, and *P. ardesiacus* and *P. malaccensis* of Cabanis are males in immature plumage. It will be noticed that among the specimens in Mr. Sharpe's possession there are no authenticated females of either *P. galericulatus* or *P. ardesiacus*, nor any males of *P. coronatus*, which, if there is only one species, would naturally be the case.

Among the specimens of *Cyanocorax* in the Paris Museum is one brought from the south of Sao Paulo, in Brazil, by M. Auguste St.-Hilaire, which differs conspicuously from other specimens in the colour of its plumage, and regarding which I have not been able to find any description or notice. It is not mentioned in Mr. Sharpe's Catalogue of the Corvidæ lately published. The specimen appears to be most nearly allied to *C. cæruleus*, having the same general distribution of colours, and is nearly of the same size. I propose to call it

CYANOCORAX INEXPECTATUS.

Head, throat, and breast blackish brown. Back, wings, and tail verditer-blue. Inner webs of primaries dark brown. Underparts greyish brown, with a shade of verditer in certain lights. Bill, feet, and tarsus black. Total length 15½ inches, wing 8, tail 7½, tarsus 1⅝, bill on culmen 1⅜.

This bird, when placed by the side of *C. cæruleus*, in the colour of its plumage, bears the same relation to that species as the *Cyanocitta yucatanica* does to the *C. beecheyi*, the verditer-blue forming a strong contrast to the rich dark cobalt-blue of *C. cæruleus*. It is probably not in full plumage, as there are indications that the underparts would be as bright a verditer-blue as are the wings and back. I am indebted to Prof. A. Milne-Edwards and M. Oustalet for facilities of investigating and describing this bird.

Mr. Sharpe has described (Cat. Birds, iii. p. 181) a bird from Aleya, on the south-eastern coast of New Guinea, as *Phonygama jamesi*, separating it from the *P. keraudreni*, from its having the general colour above and below burnished green instead of burnished steel-blue. I have had the opportunity, through the kindness of my friend Prof. Salvadori, of examining specimens of *P. keraudreni* from the Aru Islands, from Ramoi, on the west coast of New Guinea, opposite Salwatty, and from Yule Island, on the south-east coast of New Guinea, quite close to Aleya, whence came the so-called *P. jamesi*. These specimens, from such distant localities, are absolutely identical, except that the Yule-Island bird has less of the green gloss on the back than the others, and slightly more on the throat and breast. These variations are only such as are to be expected among examples of birds having a metallic plumage, and are at times carried to an extreme degree. I observed similar variations, when writing my monograph of the Paradiseidæ, in specimens of *P. keraudreni*, as I consider them, from Australia and New Guinea; for while the former are usually of a more green plumage, I have seen them with a purple gloss; and I consider it not improbable that a large series of these birds from contiguous localities would exhibit a graduation from the blue *P. keraudreni* to the green so-called *P. gouldi*. I am inclined, therefore, to consider that the *Phonygama jamesi* is not really distinct, Mr. Sharpe's type having possibly a little more green lustre on parts of its plumage than western New-Guinea specimens—although from the description I should think not, as it agrees perfectly with Beccari's Aru-Island bird, now before me.

I will add that I have compared the Yule-Island bird with Lesson's type of *P. keraudreni* from Dorey, and that, if there is any difference, Lesson's bird is a little more green upon the back, which would bring it nearer to *P. jamesi*, thus showing that these tints are not to be depended upon for specific characters; for if there are two species, Lesson's type ought to be the bluer.

The types of *Manucodia jobiensis* have been placed in my hands for examination by Prof. Salvadori. They represent, I

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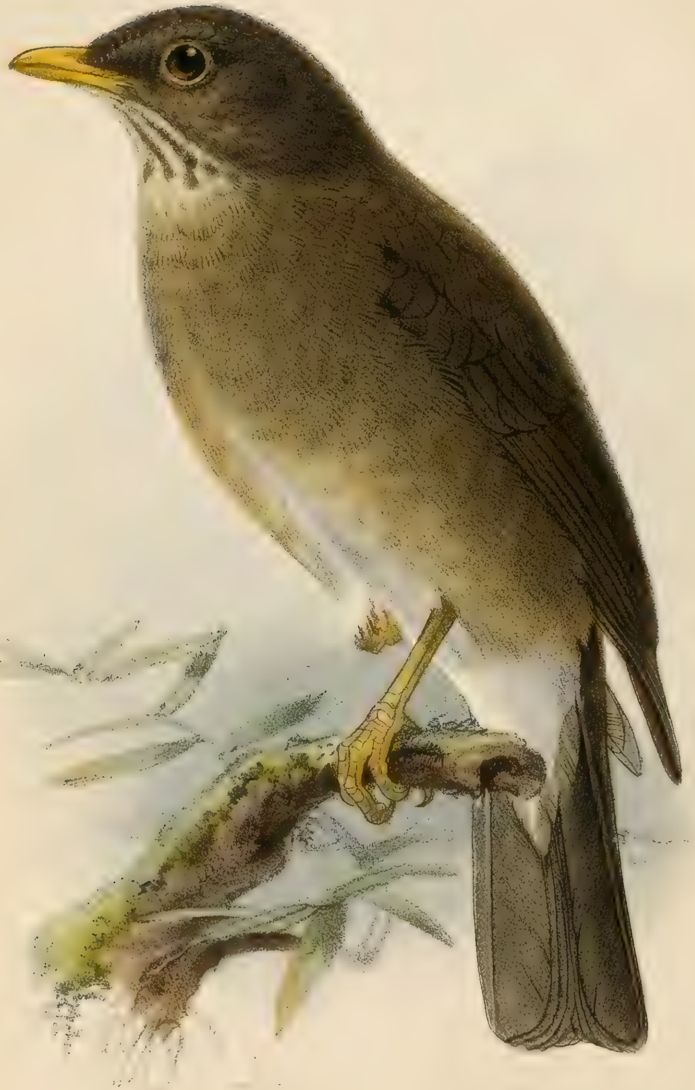

J G Keulemans lith.

Hanhart imp

TURDUS BRUNNEUS.

think, a distinct species, very close, it is true, to both *M. atra* and *M. chalybeata*, but exactly intermediate, and possessing characters of both species. In the texture of the feathers of the head, breast, and mantle, *M. jobiensis* is close to *M. chalybeata*; but in the rest of its plumage, and especially in the form of the bill, it resembles very closely *M. atra*. The culmen is compressed, and does not spread at the base as in *M. chalybeata*.

IV.—*Characters of a supposed new Species of South-American Thrush.* By GEORGE N. LAWRENCE.

(Plate I.)

TURDUS BRUNNEUS, sp. nov. (Plate I.)

The upper plumage is of a dark olive-brown, in some lights inclining to greenish; crown and sides of the head of a clearer brown; tail-feathers dark liver-brown, their shafts above are dark reddish brown, underneath they are whitish; quills dark brown on their inner webs, the outer the colour of the back; under wing-coverts pale cinnamon; chin and upper part of throat whitish, the centres of the feathers broadly marked with light brown; lower part of neck, breast, sides, and thighs of a light reddish brown; middle of abdomen and under tail-coverts whitish, the feathers of the latter edged with light brown; bill pale yellow; tarsi and toes light yellowish brown, claws yellow. Length (skin) 9 inches; wing $4\frac{5}{8}$, tail $4\frac{1}{8}$, tarsi 1, bill from front $\frac{3}{4}$.

Hab. Upper Amazons (*Hauxwell*).

Type in my collection.

[We have tried in vain to make this specimen, which Mr. Lawrence has sent to us for examination, fit some described species. It is perhaps nearest to *T. leucomelas*, but is of a darker brown, and has the chest washed with a strong tinge of the same colour. The under wing-coverts are of a deeper rufous, in which respect it approaches *T. albiventris*.—EDD.]

V.—*Notes on the Birds of the Province of Buenos Ayres.*

By HENRY DURNFORD.

[Continued from 'The Ibis,' 1877, p. 203.]

IN continuation of my previous notes on the ornithology of this district (Ibis, 1877, p. 166 *et seqq.*), I have a few further remarks to make on species already mentioned, and other species to introduce to the list. The nomenclature used is that employed by Messrs. Sclater and Salvin in their 'Nomenclator Avium Neotropicalium'*.

1. GEOTHLYPIS VELATA (Vieill.); Nomencl. p. 10.

Not uncommon at Baradero in April 1876, and found in low willows and thickets bordering the river. I have not observed this bird near Buenos Ayres.

[Mr. Durnford's skins (which he has labelled *Basileuterus vermivorus*) are females of this species.—EDD.]

2. CYCLORHIS VIRIDIS (Vieill.); Nomencl. p. 13.

Common in December in the riverain wood at Punta Lara. Iris light reddish brown; beak light yellowish brown, under mandible lightest; legs lavender, soles flesh-colour. Sexes alike.

3. PROGNE CHALYBEA (Gm.).

This is the correct name of the *Progne* termed *P. purpurea*, Ibis, 1877, p. 168. I called it in my MS. *P. domestica*, which name Dr. Burmeister gave me. *P. purpurea*, no doubt, occasionally comes here; but I have never seen it, and when I sent my notes I certainly did not mean to refer to the same bird as I saw at Chuput, which was undoubtedly *P. purpurea*, and of which I sent skins.

4. PETROCHELIDON PYRRHONOTA, Ibis, 1877, p. 169.

This Swallow was observed on its migration on the 4th March 1877, at Moreno, and on the 15th April 1877, at Lujan bridge. On both occasions they were flying steadily N.N.E., and in considerable numbers. I shot some, to identify them, on both occasions.

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* [We have carefully looked over Mr. Durnford's specimens, and made some slight alterations in his nomenclature, so that it may correspond exactly with that of the 'Nomenclator.'—EDD.]

5. TANAGRA CYANOPTERA, Vieill.; Nomencl. p. 14.
Observed in January and February 1877 in the riverain wood, but all that I have met with have been immature birds. Iris wood-brown; beak lead-colour; feet pale slate. Feeds on buds and berries.

6. SALTATOR CÆRULESCENS, Vieill.; Nomencl. p. 26.
I found this bird pretty common near Baradero in April 1876, on low scrubby ground in the neighbourhood of water. Stomach of one shot contained buds. Beak very dark horn-colour; legs not so dark, soles pale flesh-colour; iris dark brown. I have not met with this bird near Buenos Ayres.

7. ICTERUS PYRRHOPTERUS, Vieill.; Nomencl. p. 37.
Common at Baradero in April 1876, and seen at Alvear in September.

8. XANTHOSOMUS FLAVUS (Gm.); Nomencl. p. 37.
Rare. I shot one specimen on the 9th September 1876 at Alvear. Iris wood-brown; beak and legs dark horn-colour.

9. PSEUDOLEISTES VIRESCENS (Vieill.); Ibis, 1877, p. 175.
Nests in November, and makes a neat structure of hair and a little grass, lined with feathers, and placed in reed-beds. It is usually situated about four feet above the water, and supported on all sides by reeds. The eggs have a white ground-colour, minutely speckled, chiefly at the larger end, with light and dark purple spots, some inclining to rufous. I have observed this species in this district in April, and also from September to December.

10. FLUVICOLA ALBIVENTRIS (Spix); Nomencl. p. 43.
A summer visitor, and pretty common then in the riverain wood. Like the other Tæniopterinæ, it sometimes remains motionless on a twig for some time, and suddenly makes a dart at some passing insect. It is fond of perching near the ground. Iris rufous brown; beak, legs, and feet black, soles of latter grey.

11. Alectrurus guira-yetapa (Vieill.); Nomencl. p. 43.

The only occasion on which I have seen this bird was on the 11th February 1877, when I met with two near Lujan bridge. I found them in a dry open space, where the "paja" grass had been recently burnt during the dry weather. They clung to the tall stems of the grass which was still standing, or flitted rapidly from one to the other, catching insects on the wing. They were both immature birds. Iris dark wood-brown; legs and feet black; beak yellowish horn-colour, under mandible lightest. Their stomachs contained remains of small Coleoptera.

12. Lichenops perspicillatus (Gm.); Ibis, 1877, p. 176.

This bird nests in October. Its nest is made of small pieces of rushes or grass, lined with hair, and placed in a tuft of grass about two feet from the ground, and in the immediate neighbourhood of water. Their first moult takes place in February, and then the males put on their decided colours, whilst the females remain almost the same as before: previous to the moult both sexes are alike.

13. Hapalocercus flaviventris (Lafr. et D'Orb.); Ibis, 1877, p. 177.

This bird nests about eighteen inches from the ground, in a clump of grass or low bush, and makes a very neat structure of fine grass, warmly lined with feathers and wool. I have not found the eggs.

14. Elainea albiceps (Lafr. et D'Orb.); Nomencl. p. 48.

This is a spring and summer visitor, and at these seasons pretty common, especially in the riverain wood. The nest is a small and very neat structure of lichen or moss, lined with hair and feathers, not unlike our English Chaffinch's nest, and is usually placed about ten feet from the ground in the fork of a tree.

15. Myiodynastes solitarius (Vieill.); Ibis, 1877, p. 178.

Iris wood-brown; beak, legs, and feet black, soles of latter flesh-colour.

16. MYIARCHUS TYRANNULUS (Müll.); Nomencl. p. 52.

Not uncommon at Punta Lara, and nesting, though my search for the nest was unsuccessful. In its habits it resembles the other Tyrannidæ here, perching on the topmost twig of a tree, whence it gets a good view on all sides, and is well situated for catching passing insects. Iris dark brown; legs, feet, and claws black; upper mandible black, under mandible dark horn-colour.

17. PACHYRHAMPHUS POLYCHROPTERUS (Vieill.); Nomencl. p. 56.

The only occasion I have observed this bird was on the 28th January 1877, when I met with a pair in the riverain wood close to Belgrano. They were busy catching flies, making frequent sallies from a willow tree in pursuit of them. They have a loud whistling note. I was only able to shoot the male.

18. SYNALLAXIS ALBESCENS, Temm.; Ibis, 1877, p. 180.

The nest of this *Synallaxis* is a large circular structure of sticks, with the aperture on one side, and the twigs around it project slightly beyond the rest of the nest. It is lined with hair and a few feathers, and placed in a bush from four to eight feet from the ground. The eggs are nearly white, having a faint greenish tinge.

19. SYNALLAXIS SULPHURIFERA, Burm.; Ibis, 1877, p. 180.

On the 10th November 1876 I found the nest of this bird in the riverain wood at Belgrano. It was situated in a dense bed of reeds and scrub, and placed on the top of an old willow-stump about five feet from the ground. It was domed and circular in shape, with the aperture in one side, and formed of reeds, warmly lined with hair and feathers. There were two eggs, quite white in colour.

20. SYNALLAXIS MALUROIDES, D'Orb.; Ibis, 1877, p. 180.

This bird nests in the centre of the thick tufts of paja grass growing in water, from which the nest is only a few inches distant. It makes a very slight open structure of grass, lined with a few feathers and a little wool. Eggs quite white.

21. Thamnophilus argentinus, Cab.; Ibis, 1877, p. 183.

The nest of this bird is a very slight flimsy structure of grass, lined with the finer fibres of the same material and a little hair. It is placed about three feet from the ground, and suspended from the twigs of a bush, which pass through some portion of the nest, and is situated in reed-beds and swampy places.

22. Heleothreptus anomalus (Gould); Nomencl. p. 97.

On the 31st March 1877 I was given this bird, shot the previous day near Quilmes. It is the only specimen I have seen here, and the museum does not possess an example. My friend informed me that he flushed it from a clump of thistles. Its stomach was full of insect-remains, and on dissection it proved a female.

[It is a female of the rather rare Caprimulgine form *Heleothreptus anomalus*, which we have not previously seen from so far south. Natterer obtained it in several localities in Southern Brazil (see Pelzeln, Orn. Bras. p. 12).—Edd.]

23. Picus mixtus, Bodd.; Nomencl. p. 99.

Partially resident, but more numerous in the summer than the winter. The male is rather more brightly coloured than the female, and the red feathers on his head are more numerous than in the other sex.

24. Butorides cyanurus (Vieill.); Nomencl. p. 125.

Though I have never shot this bird I have often observed it in reed-beds near Lujan bridge, and less frequently at Punta Lara. It frequents the same sort of places as *Ardetta involucris* and *Nycticorax obscurus*, though it is not nearly so numerous as either of these birds, and, owing to its shyness, I have not yet been able to obtain a specimen.

25. Ardetta involucris (Vieill.); Ibis, 1877, p. 189.

On the 29th October 1876 I found a nest of this bird in a small lagoon amongst a clump of tall rushes, and just above the water. It was entirely composed of short pieces of these rushes, arranged with their points meeting in the centre, and not more than seven inches in diameter, altogether a very flimsy and slightly built structure. It contained three eggs of a bright pea-green colour, measuring 1·3 × ·9 inch. I flushed one of the old birds from the nest.

26. Nycticorax obscurus, Bp.; Ibis, 1877, p. 189.

In November and December 1876 I found this bird common in large flocks, chiefly immature birds, which do not attain their full plumage till more than a year old.

27. Phimosus infuscatus (Licht.); Nomencl. p. 127.

Last summer I saw some eggs of this bird, obtained, shortly before Christmas, about two hundred miles to the south of Buenos Ayres. They are of a bright azure-blue colour and very handsome. A friend who has taken the nests tells me they are found on a dry spot close to a lagoon, and composed of a few pieces of grass in a slight hollow. Four is the full complement of eggs.

15th April 1877. Common in this neighbourhood in large flocks. Birds of the year have much naked skin on the forehead, and many brown feathers on the head.

28. Chauna chavaria, Linn.; Ibis, 1877, p. 190.

Though apparently such an awkward unwieldy bird, the Screamer can, and frequently does, rise to such a height as to appear a mere speck in the sky, and I have often watched two or three birds gracefully circling round each other like Eagles for half an hour at a time. They are enabled to do this owing to there being a considerable quantity of air, which is retained in small cells, between the outer skin and the lining membrane of the body, especially on the chest and stomach, and less visibly on the sides. On the 11th February 1877 I shot a young bird in downy state, presumably about ten days old. Head light rust-colour, neck pale grey, back pale chocolate; wings very small and, with the breast and stomach, grey; iris wood-brown; feet brick-red.

29. Dendrocygna fulva (Gm.); Nomencl. p. 129.

Common at Alvear in September and at Punta Lara in December, congregating in enormous flocks. Whilst on the ground they stand in an exceedingly upright position. The Ducks supplied to the ships and steamboats in the port are principally of this species, and a large number are disposed of in this way.

30. DENDROCYGNA VIDUATA (Linn.); Nomencl. p. 129.

I have never shot this bird; but it is brought into the market in the winter in large numbers from the south, where it must be numerous at this season. Beak and legs black.

31. ANAS MELANOCEPHALA, Vieill.; Nomencl. p. 129.

Rare: the only time I have met with this Duck was on the 9th September 1876, whilst shooting in the reed-beds at Alvear, about twenty miles to the N.W. of Buenos Ayres, where I flushed a male and female, and shot the latter. Iris wood-brown.

32. QUERQUEDULA BRASILIENSIS (Gm.); Ibis, 1877, p. 192.

On the 29th October 1876, whilst endeavouring to get at a nest of *Conurus patagonus* in a steep "barranca," about twenty miles to the north-west of Buenos Ayres, two of these Ducks flew from a cleft in the cliff about eighteen feet from the ground. Though we were unable to reach the spot, I have no doubt they were nesting here, and I subsequently observed two more birds on the top of the cliff.

33. DAFILA SPINICAUDA (Vieill.); Ibis, 1877, p. 192.

On the 19th November 1876 I met with a brood of these Ducks in the Las Conchas, near Moreno. On coming upon them unexpectedly, quietly reposing on the water with their mother, the latter immediately feigned lameness, to draw me away. I had to strip and plunge into the stream, and after hard work, swimming for nearly an hour, secured four; the brood consisted of about ten.

Head above dull brown, lightest towards the base of the upper mandible, sides grey. Behind the eye is a short white streak, beneath this a rufous-brown streak, and lower still grey. Back and tail dull brown, tips of the feathery down on the wings white. Upper part of chest inclining to pale rufous, remainder of chest, throat, and stomach white. Flanks grey. Beak dark olive, tip lighter, and under mandible lighter than tip. Legs, feet, and claws olive. I imagine these chicks to have been about eight days old.

34. SPATULA PLATALEA (Vieill.); Nomencl. p. 130.

Partially resident and common. Perhaps the easiest Duck to approach, and considered of little value for the table. Generally distributed. This bird was accidentally omitted from my last communication.

35. METOPIANA PEPOSACA (Vieill.); Ibis, 1877, p. 192.

The day before Christmas day of last year, whilst working through an extensive reed-bed, about fifteen miles to the north-west of Buenos Ayres, I found a nest of this bird, from which I flushed the female. It was made of dead rushes, warmly lined with down, and placed about six inches above the water. The eggs were ten in number, of the usual Duck's-egg colour, and measure 2·350 × 1·7 inch.

From all I can learn in this country, *Dafila spinicauda*, *Mareca sibilatrix*, *Querquedula versicolor*, and *Querquedula flavirostris*, all nest on the ground, generally under a clump of thistles, whilst *Metopiana peposaca* nests in reed-beds and similar places, and builds its nest just above the water.

36. COLUMBA PICAZURO, Temm.; Nomencl. p. 132.

My *Columba maculosa* (Ibis, 1877, p. 193) should doubtless be *C. picazuro*, as suggested by the Editors in a footnote.

37. RALLUS MACULATUS, Bodd.; Nomencl. p. 139.

A single bird was taken in a field of clover whilst mowing was going on at Rivadavia, on the banks of the Plata, and about seven miles N.W. of Buenos Ayres. It lived for some time in confinement, but was at last eaten by rats.

[No specimen is sent; but it would appear that this is the bird intended.—EDD.]

38. RALLUS RYTHIRHYNCHUS, Vieill.: Nomencl. p. 139.

My last communication contained a notice of a nest and eggs under the head of *R. nigricans* (Ibis, 1877, p. 193); but subsequent observations have proved that the nest and eggs there mentioned could not have belonged to this bird. What they did belong to I am quite at a loss to understand; for the bird I saw leave the nest appeared to me a *R. nigricans*, without doubt; and I cannot guess what it could have been.

Last spring I found two nests, one at Belgrano, the other near Lujan bridge, from both of which I flushed the *Rallus nigricans*. In both cases it was composed of reeds, rather loosely put together, and situated in the centre of a tuft of reeds growing in the water, from which it was raised three or four feet. The nest at Lujan bridge contained eggs. They are of a stone ground-colour, minutely speckled all over with pink spots, and measure 1·6 inch by 1·150.

[Mr. Durnford's skins belong to *R. rythirhynchus*, not to *R. nigricans*.—Edd.]

39. Fulica armillata, Vieill.; Ibis, 1877, p. 195.

Since I wrote my last communication I have received eggs from the south of Buenos Ayres; and I am told that the birds are in many places quite common. The eggs may always be distinguished from those of either *F. leucopygia* or *F. leucoptera* by their superior size. They are of a light stone ground-colour, thickly speckled with blotches and spots of various shades of red, and measure 2·2 × 1·5 inches.

40. Fulica leucopygia, Hartl.; Nomencl. p. 140.

Common in the lagoons to the north of Buenos Ayres. The only bird that this species can be confounded with is *F. leucoptera*; but a sure mark of distinction is the uniform colour of the wings, which in the latter species have a white bar across them, caused by the secondaries being tipped with white.

The nests of this bird and *F. leucoptera* are much alike; but the former is perhaps rather the smaller. It is formed of reeds, and placed in a clump of the same, the bottom just above the water. The eggs vary in number from six to eight, and also vary a good deal in colour. Their ground-colour is dark greyish brown, finely mottled or streaked with rufous and darker brown, some of the spots being of a considerable size.

[We have examined Mr. Durnford's skin of this species, and find it correctly named.—Edd.]

41. Fulica leucoptera, Vieill.; Ibis, 1877, p. 195.

As common as *F. leucopygia*, and nesting in similar localities. Eggs of a stone-grey ground-colour, speckled and streaked with dark rufous and black spots; they vary, however, a good deal in colour. I have generally found six to be the number laid.

42. Ægialitis collaris (Vieill.); Nomencl. p. 43.

From having observed this species in October, December, and February, I conclude it is a summer visitor, though I believe it is the same species that Mr. Hudson calls (P. Z. S. 1871, p. 261) "a pretty little cinereous Plover, with a rufous head and belted breast," and which, he says, "is also found in winter sparsely distributed over the southern half of this State." I have always found it on dry sandy ground, frequenting the same sort of places as *Æ. hiaticula* in England.

43. Himantopus brasiliensis (Brehm); Ibis, 1877, p. 198.

On the 24th December, 1876, I found two or three pairs nesting near Lujan bridge, and, after lying behind a bank for about twenty minutes, watched one old bird onto the nest. This was on rough swampy ground, and on a slightly elevated spot; it was composed of a few pieces of roots and dry grass, which were placed in a slight hollow. It contained four eggs, in general appearance similar to those of *Vanellus cayennensis*, but rather longer in proportion to their breadth. The ground-colour is pale olivaceous, thickly blotched and streaked with dark brown and black markings, chiefly at the larger end. Both parent birds showed extreme solicitude about their nesting-ground being invaded, and endeavoured first to drive me away by angry screams, and darting close by my head; and finding that useless, one of them feigned lameness.

44. Tringa maculata (Vieill.); Nomencl. p. 145.

Observed in October, December, January, February, and April, and very common. Usually seen in large flocks. I have sent a note on this species before.

45. Tringa fuscicollis (Vieill.); Nomencl. p. 145.

Very common in the spring and autumn. Common at Baradero in April. Always seen in flocks.

46. Rhyacophilus solitarius (Wils.); Nomencl. p. 146.

A spring and summer visitor; but I have never found its nest, although I have observed it from October to March. During this time I have constantly observed it about little pools and swamps between Palermo and Belgrano, and also about Campana, on the Parana. It differs from the other Sandpipers here (*Gambetta melanoleuca* and *G. flavipes*) in preferring the neighbourhood of trees and scrub to the open lagunas or "arroyos" in the campo. In size slightly less than the last-named bird, I have seen no other Sandpiper here it can be confounded with. It has a loud sharp note, which it utters both on the ground and on the wing, and which is very like that of the Green Sandpiper at home. Its food consists of soft-bodied aquatic larvæ. Iris wood-brown; beak black, with the basal half of both mandibles inclining to orange; legs and feet between pea- and olive-green.

47. Larus dominicanus, Licht.; Ibis, 1877, p. 201.

Adult.—Beak pale yellow; spot on the angle of the lower mandible orange. Iris light grey. Legs pale yellowish green; claws black.

Immature, after second moult.—Beak black. Iris wood-brown. Legs pale lavender; claws black.

These notes were taken from specimens shot on the 8th and 9th December 1876.

VI.—*Notes on the* Dicruridæ, *and on their Arrangement in the Catalogue of the Collection of the British Museum**. By Arthur, Marquis of Tweeddale.

The Dicruridæ constitute a natural, self-contained, sharply defined family, which has its members ranging throughout the Æthiopian and Indian regions and the Austro-Papuan, including the Moluccas. One, and only one, appears to be migratory, *Buchanga leucogenys,* which reaches Japan in the summer months. As indicated by the form of the beak, the presence of strong rictal bristles, the short tarsus, short toes, and ankylosed first phalanges of the outer and middle toes, the *Dicruri* are Muscicapine in their affinities; and this relationship is unmistakably exhibited in their habits. All the species of which the ways have been recorded, have the habit of descending from their perches to catch insects on the wing, and then immediately returning to the same or some adjoining place of rest. Some species, such as members of the genera *Bhringa, Chaptia, Dissemurus,* and several of the genus *Buchanga,* never descend to the ground, but capture their prey entirely on the wing. *Edolius forficatus,* according to Pollen ('Faune de Madagascar'), has similar habits. Those species that do descend to the ground, such as *Buchanga atra,* do so to seize their food, and only remain for a short time. This last-named species has the useful habit, where there are extensive plains of long dry grasses without suitable trees or bushes, of sitting on the backs of antelopes, sheep, cattle, &c., using them as beaters, and catching on the wing the insects disturbed by the feet of the grazing animals. The feet in all the *Dicruri* are essentially constructed for grasping, by which, together with the lengthened tail, walking is rendered difficult, if not altogether impossible. During a seven years' residence in India, I never once observed the common King-Crow (*Buchanga atra*) move along the ground; and it is the most widely spread and least specialized of all the Asiatic species. The flight of all is short, but rapid while it lasts. Most writers, and certainly all those who have observed members of this family in a wild state, must agree with Jerdon in classing the *Dicruridæ* between the Shrikes and the Flycatchers; and I venture the opinion that it will require a more comprehensive and stronger character than that of the relative position of the nares and the chin-angle before ornithologists will concur in associating them with the Crows and the Orioles.

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* Catalogue of the Passeriformes in the Collection of the British Museum.—*Coliomorphæ.* By R. Bowdler Sharpe. (1877.)

It is not proposed in the following notes to debate whether the Coliomorphæ of Mr. Sharpe constitute a natural or an unnatural and highly artificial group. Their object is rather to notice a few errors which it seems desirable in the interest of science to correct before they pass into general circulation, and before they become adopted, as they naturally will be, by authors influenced by the high authority of the work in which they appear. This volume of the Catalogue of Birds, as well as the two it follows, deserves our acknowledgment; and whether we approve or disapprove of the classificatory system adopted, we cannot withhold the expression of our satisfaction at the diligence it discloses. If there are in it important omissions, occasional errors, and evidences of a desire to create new species on grounds less valid than those considered by the author insufficient to support the species of others, it is certainly more owing to lack of leisure than to a disinclination to labour. The systematic arrangement of the species by Mr. Sharpe seems in some cases artificial, and not always to be unlocked by the key he supplies for the genera. There is also a certain inconsistency displayed in the discrimination of the species; but it must be acknowledged that some of these are exceedingly difficult to make out.

The prevailing colour of the Dicruridæ is black—the only character they have in common with the Crows. In some all the plumage is burnished with metallic reflections, in others partly so. A few wear an ashy-coloured dress, with more or less of a silky gloss; and in four of the species pure white enters into the mature coloration. Specific differences are therefore not easily to be established by slight variations in colour; and structure becomes the most available guide. The nasal and frontal plumes and the rectrices are the parts which exhibit the greatest tendency to specific development or variation; and in some, such as in the species falling under *Dissemurus,* the structure of the outer pair of rectrices is very unstable, the tendency being to revert back to the fully webbed feathers. I have met with examples of *D. brachyphorus, D. malabaricus, D. platurus* (ex Sumatra), and *D. paradiseus* with the outer pair of rectrices flattened and fully webbed throughout their length, as is always the case in *D. megarhynchus* and *D. lophorhinus.* The nasal and frontal plumes occur, according to the species, in every stage of development, reaching to a fully webbed, lengthened, and voluminous overhanging frontal crest in *D. grandis*; while in *Chibia hottentotta* the nasal plumes are even more lengthened, but the webs of the longest are obsolete. A parallel instance in other genera occurs in *Edolius forficatus,* in which species the nasal plumes are developed into a short erect bunch of webbed feathers, while in *Buchanga andamanensis* the erect shafts are webless. The tendency of the outer pair of rectrices to twist, whereby the full growth of the inner is probably checked, is indicated in every species in which the outer pair is abnormally lengthened relatively to the remaining pairs. The amount and distribution of the metallic burnishing on parts of the plumage is another direction in which specific variation exhibits itself. Now if, instead of an exaggeration or abortion of a frontal crest for instance, the variation of a species showed itself by some constant mark of a different colour, or even shade of the same colour, the specific distinctness of the species possessing it would be readily admitted. Mr. Sharpe ignores such differences—for example, in the genus *Dissemurus,* and unites all the races which have been separated by previous authors; and yet he makes a new species, *D. ceylonensis,* upon grounds even less sufficient.

DICRURUS[*].—Under this genus Mr. Sharpe places three African species, and associates them with two Philippine and a Malaccan species which extends to the Himalayas. We thus have the small South-African *D. ludwigi* made congeneric with *D. balicassius*; and although "tail nearly square, outer feathers not curved upwards," constitutes in the key the differentiating generic character, *D. annectens* with its considerably forked tail and twisted outer rectrices finds a place in the genus.

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[*] Vieillot established this genus in his 'Analyse,' 1816—that is, at a date anterior to and in a work different from the one quoted by Mr. Sharpe.

Dicrurus annectens is an incipient species of a crestless *Dissemurus*, on the confines of which genus it should be placed.

Dicrurus atripennis, D. modestus, D. ludwigi.—These three African species cannot be generically separated from *D. assimilis* (ranked as a *Buchanga* in Mr. Sharpe's Catalogue). The four known African species of the family form a natural group with subfurcate tails, and should be kept distinct under Reichenbach's title *Musicus*. The continental *Dicrurus coracinus*, is not kept separate from the insular *D. modestus*, on the ground that the only tangible distinction is one of dimensions. This sound principle, as will be shown further on, is not always acted upon.

Chibia.—All the Austro-Papuan and Moluccan species with nearly square tails are included under this genus by Mr. Sharpe. The arrangement does not appear to be natural. *Chibia hottentotta*, the type of the genus, is an isolated form with a curved mandible. The gonys is curved, and does not rise from the chin-angle in a straight line. The bird is to some extent a flower-pecker, and clings to the twigs of large flowering trees, searching for its food in the calyx and among the petals of each blossom; and although little has been recorded of the habits of the Papuan species, their bills are formed on a model such as that of any species of *Dissemurus*, and apparently are not adapted for exploring flowers. "All the principal groups of the Indo-Malayan islands" are brought by Mr. Sharpe within the area inhabited by the members of the genus *Chibia* as defined by him, while China is omitted. With the exception of Lombock and Flores, I am not acquainted with any Indo-Malayan island which is inhabited by any one of its members. As yet not one has been recorded from the three large Sunda Islands, nor from the Philippine archipelago; nor has one been found at Malacca. Exclusive of *C. hottentotta,* the species form a natural section of the *Dicruridæ,* limited in distribution (with the exception of *D. bimaënsis*) by the bounds of the Austro-Papuan area, the Moluccas inclusive, *D. leucops* and *D. pectoralis* dwelling on its confines in Celebes and the Sula Islands.

Chibia hottentotta.—The title given to the Chinese race of this species (*brevirostris*) and its reference (Mus. Hein. i. p. 112. no. 603) are not to be found in the list of synonyms, although *C. brevirostris* is considered by Mr. Sharpe as being specifically inseparable. An examination of the type specimen at Halberstadt, and a comparison made with forty examples from China, lead me to the same opinion. The bill is slightly shorter; but that is all.

The "long silky hairs" of Mr. Sharpe, which spring from the base of the maxilla in *C. hottentotta,* and, recurved back, fall over the nape, are really the denuded shafts of a certain number of the frontal plumes. Under a lens the aborted rudiments of the lateral webs can be readily detected. Behind these denuded shafts are usually a number of elongated frontal crest-plumes in different states of perfection.

CHAPTIA.—Three species are admitted; yet, as Mr. Sharpe employs the expression "subspecies" for forms which, in his opinion, are closely allied, it is not easy to detect his reasons for allowing *C. malayensis* and *C. brauniana* to stand as full species. The former is little else than a smaller form of *C. ænea,* while the latter is hardly distinguishable at all.

BUCHANGA.—Hodgson formed this genus for the reception of *B. albirictus** and *B. annectens.* The latter species is scarcely congeneric with the former; but all the long- and deeply forked-tailed Asiatic species constitute a natural group, to which Hodgson's generic title is generally applied. Mr. Sharpe includes in the genus an African species†, which has hitherto, and apparently with good reason, been classed under a separate section.

Buchanga atra.—Under the specific title given by Hermann to the common King-Crow of Southern India Mr. Sharpe includes all the forms which inhabit Ceylon, India, Burma, China, and Java. None of the races which by different authors have been separated under distinctive titles are allowed even to rank as subspecies*. This is an easy way of disposing of one of the most difficult points which occur among the Dicruridæ; but it by no means exhausts the question.

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* Mr. Sharpe gives *B. macrocerca* as the name of the type—a title he does not admit when dealing with the species.

† *D. musicus,* Vieill.=*C. adsimilis,* Bechst.

Mr. Sharpe observes (p. 246) that he "cannot understand why Vieillot's title of *macrocercus* applies particularly to the Javan bird." It was founded on *Le Drongolon* of Le Vaillant (Ois. d'Afr. t. 174), who omitted to state the origin of his type. The assumption that it came from Java merely rests on its probability; and so far Mr. Sharpe is entitled to his doubt. But then, if the origin of the type cannot be established, why does Mr. Sharpe adopt its title for his variety *a*, which includes all the British-Museum specimens of the Indian continental races, and for which Hermann's title of *atra* is the oldest and is strictly applicable?

The totally distinct African species, *D. assimilis* (Bechst.) =*D. musicus*, Vieillot, is treated of as a subspecies of *B. atra*. It is the predominant and most widely distributed Dicrurine form in Africa, and varies according to locality almost as much as *B. atra* does in Asia, several races having received distinctive titles.

Buchanga longicaudata.—A British-Museum example, "purchased," of this species is recorded with Ladakh for its origin. A note of interrogation after the name of this eccentric habitat would not have been misplaced. In contradistinction to Mr. Hume, Mr. Sharpe readily admits, as had already been admitted long ago by Jerdon and Blyth, the absolute specific distinctness of this well-marked species. It is the *Dicrurus himalayanus*, Tytler (Himalayan race), which title is made a synonym of *Buchanga atra* in the Catalogue.

Buchanga cineracea.—For the grey species of *Buchanga* which inhabits Java Horsfield's title is adopted, and that of *leucophæus,* Vieillot, is omitted, together with Le Vaillant's plate (Ois. d'Afr. 170) and description, on which Vieillot founded his title. While there may be some grounds for doubting the precise origin of *Le Drongolon,* there can be no question about *Le Drongri.* Le Vaillant could only have obtained his types from Java; and even if he got them from Burma, or from any other part of the area the species inhabits, the validity of the title would not be affected. It is true that Le Vaillant states with much precision that his specimens came from Ceylon; but no such species inhabits that island. In his account of *Le Drongri à ventre blanc,* l. c. (=*D. leucogaster,* Vieill., a description, plate, and title nowhere alluded to by Mr. Sharpe), Le Vaillant says that his type came from Batavia, and that its upper plumage is exactly the same as that of *Le Drongri.* His description of the upper plumage of both species is given in similar terms; and their colouring, as shown by the plates (170, 171), is the same. The type of *Le Drongri* is, I believe, no longer extant (indeed Le Vaillant described from desiccated specimens); but that of *Le Drongri à ventre blanc* was, when I visited Leyden some years ago, in perfect preservation. An examination of this type specimen, and a comparison of it with an authentic Javan example of *D. leucophæus,* convinced me that the type was manufactured, and made up of a specimen of *Le Drongri* (*D. leucophæus*) with the white plumage of some other bird affixed to the underparts, so as to replace the bluish grey lower plumage of *D. leucophæus.* On expressing this conviction to Professor Schlegel, he most obligingly desired his taxidermist to test the specimen. This having been done by means of applying heat, the taxidermist was enabled to strip off the whole of the white under-plumage from the chin to the crissum in one piece. This, skin and all, appeared to have been taken from the under surface of *Coccystes jacobinus,* and, after having been fitted, to have been glued on to the plucked chin, throat, breast, and abdominal skin of *D. leucophæus.* There can be no possible doubt therefore that Vieillot's title of *leucophæus* is applicable to the Javan bird, and that Horsfield's title of

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* As Mr. Sharpe permits *Dissemuroides dicruriformis* to stand as a subspecies separate from *D. andamanensis*, and *Buchanga insularis* as a subspecies of *B. cærulescens*, the principle on which, for instance, *B. minor* is united with *B. albirictus*, is not very apparent.

cineraceus must be superseded,—a conclusion which has been generally accepted for many years, but which is now, *ex cathedrâ*, upset in this Catalogue without any reason assigned.

In the synonyms of the various species catalogued by Mr. Sharpe he omits altogether the wholesome and useful practice adopted by most accurate authors of giving, either with or without brackets, according to the generic title employed, the name of the original author of the species, before that of the author using the title. The extreme inconvenience of this practice meets the student on every page; but it is very forcibly illustrated in the synonyms given of this species and of *B. leucogenys*. In the first case, the title *D. leucophæus* is attributed to Gray (*nec* V. being added), which mode of writing implies that the title of *leucophæus* was bestowed by Gray as well as Vieillot; all reference to Vieillot's title, however, being omitted. Under *B. leucogenys* we find the synonym *D. leucophæus*, Swinh. (*nec* V.), no reference to Vieillot being given; and lower down simply "*D. leucophæus*, Gray," without the intimation that it is not some one else's species. To an author deep in the mysteries, say of the 'Nouveau Dictionnaire,' this style of noting the titles used by different authors, though troublesome, would not render his search hopeless; but to a student it would involve that loss of time which it is the very object of a careful writer to save him. There are also many instances of birds which have received from different authors, unknown to one another and at different periods, the same specific title, e. g. *Hypsipetes philippinensis*, described separately by three different authors under the title of *philippinensis*. Again, there are some authors who would object to having some recent titles made to appear as if coined by them. But the main object of the synonymy ought to be to lead the student direct to all that has been written of importance relating to the species; and the method adopted by Mr. Sharpe does not in many cases fulfil this condition.

Buchanga insularis.—This, it is to be presumed, is a new title proposed by Mr. Sharpe for some undescribed Ceylonese subspecies of *Buchanga.* "*B. cærulescens,* Holdsworth, *nec* Linn." is added as a synonym. Mr. Holdsworth included the Linnæan species in his list (P. Z. S. 1872, p. 439) on the authority of Mr. Layard, who states (Ann. & Mag. N. H. ser. 2, xiii. p. 129) that he procured one or two specimens of *D. cærulescens* at Point Pedro (the extreme north of Ceylon), a very likely locality for this Indian species. Mr. Sharpe, on the authority of Capt. Legge, gives as its range "the whole east of Ceylon and central province, eastern district." *B. insularis* is introduced by Mr. Sharpe as a subspecies of No. 6. *B. cærulescens*; but when writing on No. 7. *B. leucopygialis,* a species very distinct from *B. cærulescens,* Mr. Sharpe says, "very similar to *B. insularis,* if, indeed, really separable." Of which of the two very distinct species, *B. cærulescens* or *B. leucopygialis,* is *B. insularis* then a subspecies? And why should the species obtained at Point Pedro by Mr. Layard, and identified by him as belonging to the continental species, *B. cærulescens,* be considered by Mr. Sharpe to belong to his new subspecies? We shall not be very far wrong if we reduce *B. insularis* to a synonym of *B. leucopygialis,* and if we continue to retain, on Mr. Layard's authority, *B. cærulescens* as an inhabitant of, or migrant to, North Ceylon.

Buchanga waldeni is, by the formation of its massive bill, closely allied to *Dicrurus forficatus*; and through it Mr. Sharpe passes to the latter species, which he keeps separate under *Edolius,* Cuv. *D. forficatus* is also the type of Reichenbach's genus *Drongo* (Syst. Av. t. lxxxviii.), a title which is omitted in the synonymy of the genus.

Dissemuroides andamanensis and *D. dicruriformis.*—These are the titles adopted for two races of a species, the first an inhabitant of the Andamans, the other of Great Coco and Table Islands. The two races merely differ in size, the latter being somewhat the largest. Those who regard an excess of a few tenths of an inch in the principal dimensions of birds of this size, or of a few grains in the weight, as constituting specific and differentiating characters, will follow Mr. Sharpe and keep these two birds apart; for he admits *D. dicruriformis* into the Catalogue as a distinct subspecies of

D. andamanensis. The difference in the colouring of the "gloss," alluded to by Mr. Sharpe, is not observable in the large series from both localities to which I have access.

D. andamanensis is almost a typical *Buchanga*. It has all the habits of the continental species (*teste* Davison, Str. F. 1874, p. 211); and the tail is deeply forked, as in the common King-Crow. A few of the erect frontal plumes being somewhat lengthened and denuded of their webs can scarcely constitute a generic character; and this is not relied on by Mr. Sharpe; while the only differentiating generic character given by him seems to be still less distinctive, namely "outer tail-feathers recurved at tip." Indeed, if a character at all, it is a family characteristic; for in all the Dicruridæ there is a marked inclination in the outer pair of rectrices, when produced, to recurve inwards.

Dissemuroides edoliiformis.—For this species Mr. Sharpe has rejected Vieillot's title of *lophorhinus*, which was adopted many years ago by Sundevall, and has been in general use ever since, although he admits Le Vaillant's plate of *Le Drongup* (Ois. d'Afr. 173) to represent Blyth's species, and on this plate and description Vieillot founded his title*. On the other hand, Mr. Sharpe makes Vieillot's title (*lophorhinus*) a synonym of *D. forficatus*, a species named *cristatus* by Vieillot, from another of Le Vaillant's plates (*t. c.* 166). Le Vaillant, in his account of *Le Drongup*, shows in what manner it differs from *Le Drongo* (=*D. forficatus* (L.) = *D. cristatus*, Vieill.), and mentions its larger dimensions and the shortness of the frontal crest as being points of difference. The large size, the small frontal crest, and the absence of rackets make the identification of *D. lophorhinus* with this peculiar Ceylonese species a matter of certainty. And an examination of Le Vaillant's type specimen, labelled *Le Drongup,* at Leyden, enabled me some years ago to assert its identity (Ibis, 1867, p. 468). This is a second instance in this family where Mr. Sharpe appears to have rather hastily rejected the nomenclature adopted by previous writers.

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* Vieillot gave (N. D. d'H. N. vol. ix.) Latin titles to all the nine species of *Dicruri* figured and described by Le Vaillant (Ois. d'Afr. iv.); but the number of the plate on which *Le Drongup* is figured is the only one he does not quote. It is manifest by the context that Vieillot merely reproduced Le Vaillant's descriptive words; indeed he uses Le Vaillant's very words; and under the word *Drongup* (*t. c.* p. 589) the reader is referred to *Le Drongo drongup*, V.=*D. lophorhinus*. Elsewhere and later (Enc. Méthod. p. 752) Vieillot quoted Le Vaillant's plate.

D. lophorhinus is an aberrant form of the genus *Dissemurus.* It is, if the term may be used, a transition species. If the shafts of the outer pair of rectrices were denuded for part of their length, and only webbed at their extremity, it would be a typical *Dissemurus.* Unless the structure of the outer pair of rectrices be taken into account, the bird is difficult to distinguish from *D. malabaricus,* ex Ceylon and Malabar. In the key to the species of *Dissemuroides, D. lophorhinus* (sive *edoliiformis*) is stated to be smaller than *D. andamanensis,* whereas it is larger.

The structure of *D. andamanensis* and *D. lophorhinus* being so dissimilar, I cannot concur in associating them together, much less in forming for their reception a separate genus; and it seems preferable, and more consistent with their peculiarities of structure, to place the first species under *Buchanga,* the last under *Dissemurus,* and to reject the generic title *Dissemuroides* altogether.

Dicranostreptus megarhynchus.—This single species, the type of Reichenbach's genus, does not possess any one character sufficient to remove it from the genus *Dissemurus.* Mr. Sharpe admits *Dicranostreptus* as a good genus on the strength of the extravagant length of the outer tail-feathers. In both *Bhringa* and *Dissemurus* the outer tail-feathers are extravagantly long, in the first being more than three times the length of the body; but, taken alone, the great length of an outer rectrix can hardly be considered a sufficient generic character. The outer rectrix in *D. megarhynchus* only differs from that in *Dissemurus* in having the lengthened shaft webbed throughout its entire length, this being normal in the species, whereas, although sometimes occurring, it is abnormal in the other species of the genus *Dissemurus,* except in *D. lophorhinus.* In the latter species the outer rectrix is generally completely webbed also, but is not nearly so much prolonged.

The character is clearly only specific, and the generic title *Dicranostreptus* should be merged under *Dissemurus*. This bird is the *D. intermedius*, Lesson (Tr. d'Orn. p. 380*; *cf.* Lesson, Compl. Buffon, viii. p. 439, note 5 (1837)), a title altogether omitted by Mr. Sharpe. Both names were published in 1830; but that of the discoverer of the species should rightly prevail. Mr. Sharpe includes the Ké Islands, on Dr. O. Finsch's authority, within its range. But that author so attributed it (Neu-Guinea, p. 171) on the authority of a specimen stated by Mr. Gray to have been obtained in the Ké Islands by Mr. Wallace (P. Z. S. 1861, p. 435); and there is every reason to believe that the title as it stands in Mr. Gray's "List of the new Birds collected by Mr. Wallace" (*l. c.*) is a misprint for *D. megalornis*, a real inhabitant of Ké. Mr. Sharpe omits to include the Solomon Islands, from which area it has been recorded by Mr. Sclater (P. Z. S. 1869, pp. 119, 124).

Bhringa remifer.—This is the sole representative of the genus, and is one of the many Javan species which recur on the continent north of the Malaccan peninsula, although not found on the peninsula itself. Temminck states that it is also an inhabitant of Sumatra; but this assertion requires confirmation. It is nothing but a larger species of *Chaptia ænea*, with the shafts of the outer pair of rectrices enormously developed†, nude after surpassing the remaining rectrices, until the apices are reached, where the shafts are equally webbed on both sides. These ornamental plumes are only assumed during the breeding-season (*teste* Jerdon, B. India, i. p. 435). Admitting the validity of the genus, its natural position is next to *Chaptia*.

Dissemurus paradiseus.—All the racket-tailed Drongos are "lumped" by Mr. Sharpe under the above specific title, given by Linnæus to a bird from Siam described by Brisson from a drawing made by Poivre. It would require far more space than these limited notes afford to discuss whether convenience or accuracy have led to this result. In a former paper (Ibis, 1877, p. 313) a few remarks on the crestless races of the genus *Dissemurus* will be found; and to the conclusions there put forward I still adhere; but the discrimination of the crested species is undoubtedly more difficult, requiring a large number of specimens from all parts of the area inhabited to be critically compared before any trustworthy conclusions can be arrived at. Exclusive of *D. brachyphorus,* seventeen specimens are catalogued as being contained in the British-Museum collection—material hardly adequate when it is considered that some ten species have been discriminated by various authors, to which Mr. Sharpe has added an eleventh, *D. ceylonensis.* Any one comparing a typical example of *D. grandis* (Gould)* with one of *D. malabaricus* (Scop.), ex Malabar, would scarcely hesitate to consider them as belonging to two very distinct species; but many intervening links occur, such as the true *D. paradiseus* and true *D. cristatellus* (Blyth), ex Tenasserim, in which the frontal crest is not so much developed as in the Nepal, nor so little as in the Malabar bird. But the variations in structure which differentiate the several local races of this genus, although well marked, would require a separate paper for their elucidation; and I shall therefore, for the present, content myself with pointing out a few errors that have inadvertently crept into Mr. Sharpe's summary of the genus.

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* It is true that (Ibis, 1877, p. 313) I referred this title to *D. platurus*; but it was with a note of interrogation.

† In a Tenasserim male (*mus. nostr.*), while the wing and the eight middle rectrices measure a little over five inches, the outer pair of tail-feathers measure nineteen and a half. The outside length given in the Catalogue is 17·2.

D. platurus (Vieill.) is not from Java. Temminck (Pl. Col., sub *Edolius remifer*) remarks that Le Vaillant figured (Ois. d'Afr. t. 175) the bird brought from Malabar by Sonnerat. But whether this be so or not, *D. platurus* is not from Java, it being a crestless species. The correct title for the Javan species is *D. formosus,* Cab., founded on Javan examples, which I have examined at Halberstadt. Temminck's name *retifer* (Sharpe, p. 258, sed lege *setifer*), adopted by some authors for the Javan bird, must be altogether rejected, as it was bestowed on the Malabar, Sumatran, and Javan species in the belief that they were identical*. Temminck's title, *setifer*, is ignored by Mr. Sharpe, who leaves us to conclude that it was first bestowed by Jerdon on the South-Indian species.

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* *D. malabaroides* (Hodgs.) of Mr. Sharpe (p. 260), a title published one year later. Mr. Gould's Sumatran species, said to be exactly the same, has not since been recognized.

The Tenasserim race Mr. Blyth described as distinct from the Malabar race; and to distinguish it he called it *cristatellus*. It has a less-developed crest than *D. grandis*, but a much longer one than the Malabar species. Notwithstanding, it will be found that in the Catalogue (p. 265) Blyth's title is assigned and restricted to the S.W. Indian species.

Under the new title of *D. ceylonensis* Mr. Sharpe has separated the Ceylonese from the S.W. Indian species, on account of the comparative smallness of its rackets. In all the specimens that I have examined from both localities this distinction does not hold good. It is impossible to discover any appreciable difference between mature specimens; but even if there were any, it is difficult to see how *D. brachyphorus* can be united to *D. grandis*, as is done by Mr. Sharpe in his synonymy, if the Ceylon bird merits a separate title.

IRENA.—The true systematic position of this genus has divided the opinions of ornithologists ever since Horsfield founded it. Temminck first classed it among the Dicruridæ; and so have other authors since, and Mr. Sharpe does the same. Jerdon placed it (following Blyth) among the Short-legged Thrushes, and made it constitute a separate subfamily, *Ireninæ*, the third among the Brachypodidæ, arranging it between the *Phyllornithinæ* and the *Oriolinæ*. In Jerdon's view I must undoubtedly concur. The affinity between *Irena* and *Dicrurus* is more apparent than real; it is an affinity of mimicry at best. The contour of the bill has a superficial resemblance; but the margins of the commissure are inflected in *Irena*; in *Dicrurus* they are spreading. In the last the rictal bristles are developed (a certain indication of insectivorous habits); in *Irena* they are short, weak, almost aborted. In

* In the series of Sumatran and Javan racket-tailed Drongos at Leyden I did not observe a crested Sumatran or a non-crested Javan example.

the gradation of the quills there is some analogy; but in *Irena* the 3rd, 4th, and 5th are usually equal and longest, whereas in *Dicrurus* the 3rd is generally shorter than the 4th and 5th. Beyond these points all resemblance ceases. The tarsus and feet are short and weak in *Irena*; the toes and nails are singularly slender for the size of the body; and the outer toe is free, whereas in *Dicrurus* it is ankylosed up to the first joint. The tail consists of twelve rectrices, and not of ten; and this character of itself removes *Irena* from the Dicruridæ, according to Mr. Sharpe's own definition*. The plumage is of a totally different character. The skin in *Irena* is especially tender; in *Dicrurus* it is exceedingly tough. In *Dicrurus* the sexes wear the same plumage, even the ornate plumes; in *Irena* the male has a brilliant, and the female a sombre attire. Every species of *Irena* has a number of fine nuchal hairs, which are wanting in *Dicrurus*. This last character (unknown to Blyth and Jerdon), together with the short and weak feet, indicates a great affinity to *Criniger*. The *Dicruri* are insectivorous, some even killing small birds, whereas *Irena* is frugivorous. The structure of the sternum in *Dicrurus* is, I believe, different from that of *Irena*. The notes of *Irena* are those of *Oriolus*, and have no similarity to those of *Dicrurus*. If we turn to the characters whereby Mr. Sharpe differentiates *Irena* from the other genera of the Dicruridæ, the terms will be found to be not altogether exhaustive or satisfying:—"Tail square; plumage of upper surface enamelled."

Irena criniger.—Mr. Sharpe separates Bornean and Sumatran examples from the Malaccan *I. cyanea* under this new title, solely on the ground that in *I. criniger* "the under tail-coverts are produced to the very end of the tail," while in *I. cyanea* they "fall short of the tip of the tail by half an inch." In a Malaccan example (*mus. nostr.*) the under tail-coverts reach within one eighth of an inch of the tip of the rectrices. But even if the character holds good, how can *I. criniger*, according to Mr. Sharpe's own views, rank higher than a subspecies? The presence of nuchal hairs is not mentioned in the description; but the specific title implies their existence, and the head is figured showing them. This character, as already observed, is possessed in common by every species of the genus.

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* See the characters of Dicruridæ (*t. c.* p. 4).

The following are some of the titles given to various species of *Dicrurus* which are not accounted for, and some not even mentioned by Mr. Sharpe:—*D. mystaceus*, Vieill., founded on Le Vaillant's 169th plate, = either to *D. assimilis*, or else taken from a manufactured specimen, as suggested by Verreaux (Hartlaub, Syst. Orn. W. Afr. p. 101); *D. leucophæus*, Vieill., *D. leucogaster*, Vieill., and *D. intermedius*, Lesson, already referred to; *D. ashantensis*, Temm., Hartl. (*t. c.*), = *D. modestus*; *Oriolus furcatus*, Gm. (*conf.* Walden, Tr. Z. S. ix. p. 181); *D. marginatus*, Blyth, Ibis, 1865, p. 46, a species founded on a specimen in the Derby Museum, Liverpool, habitat unknown.

Since the publication of the Catalogue an additional species, *Dicrurus striatus*, Tweeddale (P. Z. S. 1877, p. 545), has been described.

VII.—*Notes on a 'Catalogue of the* Accipitres *in the British Museum,' by* R. Bowdler Sharpe (1874). By J. H. Gurney.

[Continued from 'The Ibis,' 1877, p. 437.]

(Plate II.)

In my last paper I mentioned my intention of referring, in my next, to the group of Circaëtine or Harrier-Eagles*; but before doing so, I wish to add a few supplementary remarks to my notes upon the Hawk-Eagles.

In alluding to *Nisaëtus fasciatus*, I expressed my belief that the supposed specimens of this Eagle said to have been obtained at Riballa and Huilla, in the Portuguese possessions in South-Western Africa, would probably prove to be examples of *N. spilogaster*†. Since then I find that such has been ascertained to be the fact, as is recorded by Senhor J. V. Barboza du Bocage at p. 30 of the recently published first part of his very interesting work on the ornithology of Angola, which will form a most welcome addition to the existing works relating to African ornithology.

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* *Vide* Ibis, 1877, p. 435.

† *Vide* Ibis, 1877, p. 420.

Mr. S. Bligh, of Catton, Ceylon, has recently favoured me with a description of a living specimen of *Limnaëtus ceylonensis,* which was taken from the nest on a large isolated tree near Badulla, in Ceylon, and which he examined in the month of September, when the bird was about four months old. The age of the bird being thus known, I think it desirable to record Mr. Bligh's memorandum respecting it, which is as follows:—

"Bill black, cere slightly greenish; face feathered to the eyelids; eyes greyish blue, or bright lead-colour; a streak of white from the edge of the upper mandible runs up by the cere, ending in a direct line with the back of the eye, forming the eyebrow; the whole of the underparts white, the flanks slightly streaked with rufous brown; the sides of the breast with large oval streaks of the same, and the abdominal feathers with a few faint lines of the same; the whole head bright rufous brown, each feather on the crown slightly tipped with white, as also are the ear-coverts, showing distinctly the form of the latter; from the middle of the back of the neck the feathers have a central streak of brown, gradually shading off to the fine dark brown of the back, each feather being faintly edged with white on a paler brown border; crest black, with the longer feathers largely tipped with white, the shorter less so; the wings like the back, but with the large coverts white on the inner webs and tips, showing a long patch across the wing of rather more white than brown; primaries black; secondaries dark brown, tipped with white; larger upper tail-coverts pale hair-brown; feet pale yellow."

On lately revisiting the interesting *Limnaëtus* from Ceylon, presented to the Zoological Society by Captain Legge, and referred to in my last paper*, I find that in the interval of four months which has elapsed since my previous examination of it, the irides have assumed a more decided straw-colour, the crest has become longer and fuller, and the abdominal region has, if I mistake not, become more extensively fuliginous.

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* *Vide* Ibis, 1877, p. 431.

I have recently had an opportunity of examining three partially fuliginous *Limnaëti* from Ceylon in the collection of the Marquis of Tweeddale, which greatly resemble in coloration the example now in the Zoological Gardens; the dimensions of these three specimens are similar to those of the ordinary pale phase of *L. ceylonensis*. I may add that the Indian *L. cirrhatus*, though not subject to absolute melanism, often occurs in a partially fuliginous plumage very similar to that of the Ceylon birds to which I have just alluded.

I may also mention that, in a cage adjacent to the one in which the Ceylon *Limnaëtus* is domiciled in the Zoological Society's Gardens, will be found an interesting newly acquired example of *Morphnus guianensis*, from the Upper Amazons, in immature plumage, but a little more advanced than that described in my last paper. In this specimen the irides are pearl-grey, the cere and bare skin adjoining the eyes slate-colour, and the legs and feet yellow.

Since my last paper went to press, I have seen in the Museum at Edinburgh an apparently adult specimen of *Thrasaëtus harpyia*, said to have been obtained in Guiana, presenting the following peculiarities of coloration, which I do not recollect to have previously observed in this species:—A single small rufous feather is apparent on the forehead; the gorget across the upper breast is blackish brown, mingled with rufous, the former predominating on the upper part of the band, and the latter on the lower; many of the feathers in the small wing-coverts near the carpal joint are either wholly rufous or partly rufous and partly black, but in both cases narrowly tipped with white; the feathers of the flanks are of mingled brownish black, rufous, and white; the transverse bars on the thighs are pale rufous; and, lastly, the bars on the inner surface of the first primary are brownish black, mingled with pale rufous.

I had not an opportunity of examining this specimen, except through the glass of the case in which it is exhibited; but this somewhat imperfect examination enabled me to note these variations from the ordinary coloration of the adult Harpy, from which this curious specimen did not appear otherwise to deviate.

In my last paper* I hazarded the conjecture that two remarkable Raptores from New Guinea, *Harpyopsis novæ-guineæ* and *Megatriorchis doriæ*, recently described by Count T. Salvadori, might probably belong to the Hawk-Eagles; but I find that, as regards the last-named species, such is not the case. Mr. Sharpe, who had the opportunity of examining the types of both these species during Count Salvadori's recent visit to London, assures me that *M. doriæ* comes nearest to *Urotriorchis macrurus*, as, indeed, had been suggested in Count Salvadori's article on this subject, and that it must therefore be considered a Goshawk rather than a Thrasaëtine Eagle. *Harpyopsis novæ-guineæ* seems, on the contrary, to be very closely allied to the genus *Thrasaëtus*; and I therefore consider it to be, like the Harpy, a bare-legged Hawk-Eagle.

The Circaëtinæ or Harrier-Eagles, to which group I now propose to refer, are principally distinguished from the bare-legged section of the Hawk-Eagles by the tarsi being reticulated instead of scutellated; this is the case in all the six genera which, as it seems to me, should be included in this group, viz. *Eutriorchis*, *Dryotriorchis*, *Spilornis*, *Herpetotheres*, *Circaëtus*, and *Helotarsus*. In all these, except *Helotarsus*, the tarsi are also of an elongated character; and in all of them the head is more or less broadly crested, except in *Circaëtus*, where the nuchal feathers, though showing a tendency to a similar development, do not really form an actual crest. In *Spilornis*, *Herpetotheres*, and *Circaëtus* the wings are of moderate length, though not reaching to the end of the tail; but in *Eutriorchis*, and to a somewhat less extent in *Dryotriorchis* also, they are remarkably short, whilst the tail is elongated; in *Helotarsus*, on the contrary, the tail is proportionally shorter than in any other bird of prey, and the wings extend considerably beyond its extremity. It may also be mentioned that all the birds of this group, of which the habits are known, are partially reptilivorous, and some of them almost entirely so.

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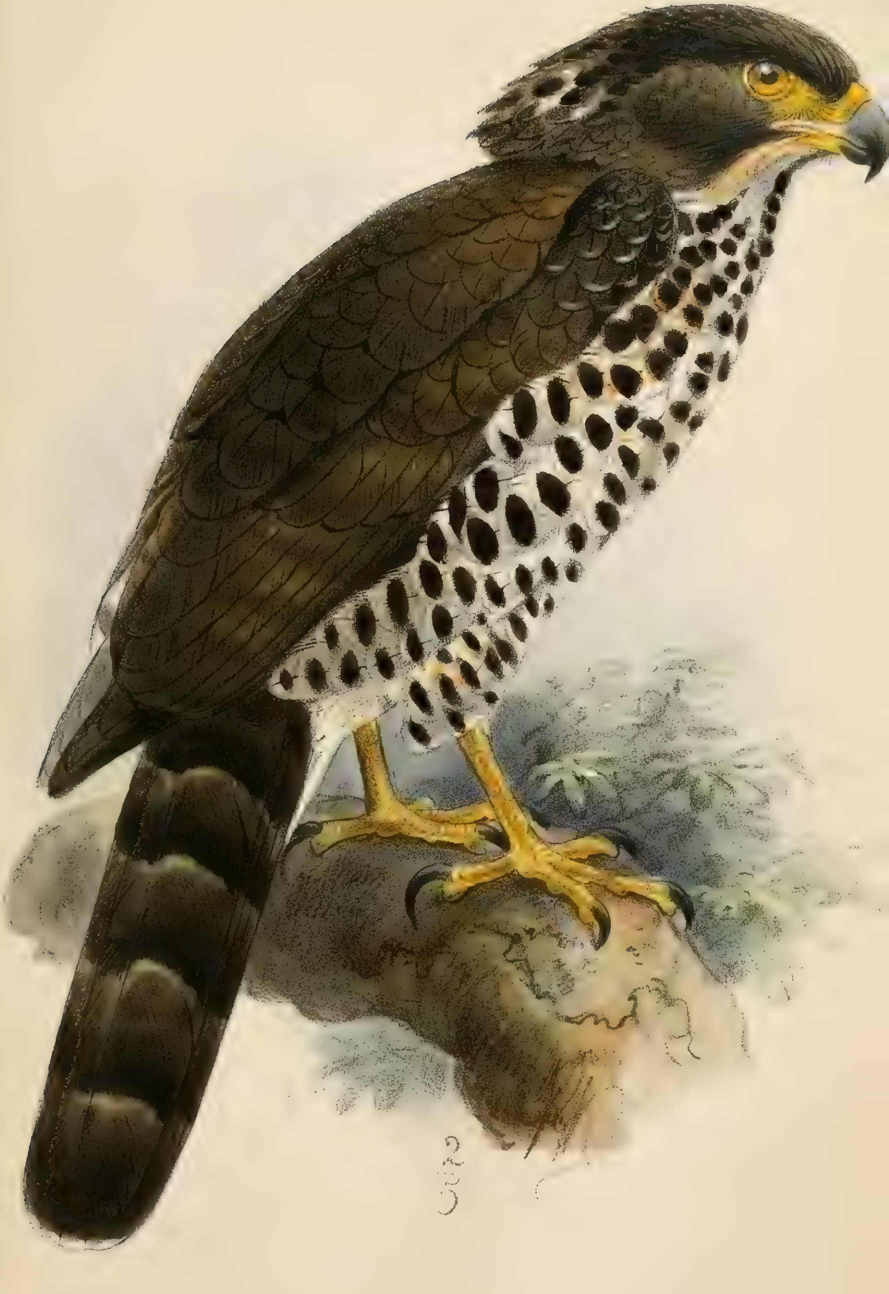
* *Vide* Ibis, 1877. p. 435.

The only species of the genus *Eutriorchis, E. astur,* is a native of Madagascar, and was described at p. 73 and figured on pl. xiii. of the 'Proceedings' of the Zoological Society for 1875, by Mr. Sharpe, who became acquainted with this very curious bird subsequently to the publication of the first volume of his Catalogue. Mr. Sharpe, in his description of this species, has sufficiently pointed out the affinities of the genus *Eutriorchis*; and I can add nothing to his observations, except to remark that *E. astur* has subsequently been also figured by MM. Milne-Edwards and Grandidier on pl. 9 B of the second volume of their 'Histoire Naturelle des Oiseaux de Madagascar.'

The affinities of the genus *Dryotriorchis* have been equally well defined at pp. 90 and 91 of 'The Ibis' for 1874 by Captain Shelley, to whose kindness I am indebted for permission to illustrate this paper by a figure of his fine specimen of *D. spectabilis,* there described. The genus *Dryotriorchis* contains but this single species, which is one of extreme rarity in collections; and the present figure of it (Plate II.) will, I think, be valuable both on that account and also because the only representation of it hitherto published is contained in the volume for 1863 of the 'Nederlandish Tijdschrift,' a work which is but very little accessible to British ornithologists. The figure there given is moreover, in my opinion, not very satisfactory, as it fails to convey the idea of the thoroughly Circaëtine aspect of this curious bird. As indicated by Mr. Sharpe in the footnote to p. 279 of his volume, the general appearance of this species bears a considerable resemblance to that of some species of the genus *Spilornis*; and I may observe that the narrow white edgings to the least wing-coverts near the carpal joint are, in this respect, especially noteworthy.

The genus *Spilornis* may, I think, be safely said to be a purely oriental one; for though Le Vaillant figures and describes one species of it (which he calls "le Bacha") as having been four times obtained by him in the mountains of Great



J.G.Keulemans lith

Hanhart imp

DRYOTRIORCHIS SPECTABILIS.

AMERICAN MUSEUM
CENTRAL PARK,
NEW YORK.
OF NATURAL HISTORY.

Namaqua Land*, it has not been met with by any subsequent explorer of those regions; and the accounts given by Le Vaillant of the localities frequented by "le Bacha," of its food, its nidification, and the colour of the irides are all at variance with what is known as regards these points in the case of *Spilornis cheela* and its near allies, from one of which latter Le Vaillant's figure appears to have been taken.

So far as I know, the only author, since Le Vaillant, who speaks of having seen a *Spilornis* of undoubtedly African origin is the late Mr. Cassin, who mentions an immature specimen brought by Du Chaillu from the Gaboon†; but it seems probable, as suggested by Mr. Sharpe in a footnote to p. 279 of his volume, that the bird thus referred to was in reality an example of *Dryotriorchis spectabilis.* It would, however, be very desirable that the specimen, which probably still exists in Philadelphia, should be compared with one of the latter species, and that a positive identification of it should thus be arrived at.

The genus *Spilornis* is a difficult one to deal with, as it comprises some geographical races which seem scarcely to be entitled to specific distinction, whilst others are more decidedly separable. On some of these points I have formerly expressed opinions which I now believe to be erroneous; and my present observations on the birds of this genus will therefore not be found to tally in all respects with some of my previous ones.

The largest, and at the same time the most northerly species of the genus *Spilornis* is *S. cheela* (Lath.) of Mr. Sharpe's Catalogue. Mr. Sharpe gives the range of this species as "Himalaya mountains eastward to China," and admits as a distinct subspecies, under the name of *S. melanotis* (Jerd.), the *Spilornis* inhabiting "Central and Southern India."

The specific name of *cheela* was founded by Latham on a specimen for which he only gives "India" as a locality, without specifying whether the bird he described was from Northern, Central, or Southern India. If, therefore, the northern race be considered specifically distinct from that inhabiting Central and Southern India, I submit that the specific name of *cheela* should be disused, and that of *undulatus* substituted, which was founded by Vigors on a specimen from the Himalayas, figured in Gould's 'Century' of birds from that region.

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* *Vide* Le Vaillant's 'Oiseaux d'Afrique,' vol. i. p. 68, pl. xv.

† *Vide* 'Proceedings of the Academy of Natural Sciences of Philadelphia' for 1865, p. 2.

In like manner I think it probable that the specific name of *melanotis,* applied by Mr. Sharpe to the South-Indian bird, should give way to the older synonym of *albidus,* founded on a specimen from Pondicherry, the priority of which has been already pointed out by Lord Tweeddale in 'The Ibis' for 1873, p. 298.

The most northern locality from which *Spilornis undulatus* has hitherto been obtained is the island of Formosa, where it was first observed by my late valued friend Mr. Swinhoe, whose recent decease forms no small gap in the circle of British ornithologists, and to whose kindness I have for many years past been frequently indebted in matters connected with the ornithology of China and of the East.

The same species* was obtained by Mr. Swinhoe at Amoy; and it is said by MM. David and Oustalet, in their recent valuable work on the birds of China, that it occurs "dans la partie méridionale de la Chine"—though in the island of Hainan Mr. Swinhoe met with a smaller race, to which he assigned the specific name *rutherfordi,* and to which I shall have occasion subsequently to refer.

Mr. Swinhoe at p. 304 of 'The Ibis' for 1866, and at p. 86 of that for 1870, gives the measurements of five Formosan specimens, in the smallest of which the wing was 18 inches, the tarsus 4, and the middle toe *s. u.* 2·25, whilst in the largest the corresponding dimensions were respectively 19·3, 4·4, and 1·4, the latter being doubtless a misprint for

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* Mr. Swinhoe originally proposed the specific name of *hoya* for the *Spilornis* of Formosa, but subsequently acquiesced in its identity with that found at Amoy and in Northern India.—*Vide* Ibis, 1866, p. 304, and 1870, p. 86.

2·4. The sex of none of these specimens is recorded by Mr. Swinhoe; but another is mentioned by him as a male, in which the measurement of the wing was 18·5 inches.

In 'The Ibis' for 1870, at p. 86, Mr. Swinhoe thus records the measurements of a pair of these birds obtained at Amoy:—

	Wing. in.	Tarsus. in.	Middle toe *s. u.* in.
♂	20	4	2·5
♀	20·5	4·5	2·3

The following measurements of specimens of *Spilornis*, from various parts of India and the bordering countries, have been taken by myself (where the sex of the specimen is not mentioned, it has not been recorded):—

	Wing. in.	Tarsus. in.	Middle toe *s. u.* in.
Cashmere	19·5	4·2	2
Himalayas	19·2	3·9	1·7
"	18·7	4·1	2·2
Nepal	17·4	3·7	2
"	17·8	3·8	2·1
"	18·6	4	2·2
"	19·7	4	2·2
"	20·4	4·2	2·3
"	20·7	4·4	2·1
Nepal Terai, ♀	19·3	4·2	2
Assam	20·2	4·2	2·2
"	17	3·4	1·8
Khalee Gungee, Assam	17·5	3·5	2
Sikkim	21·2	4·1	2·3
Darjeeling	20·1	4	2·2
"	17·5	3·5	1·9
North-west India	17·6	3·6	2·1
Northern India	20·2	3·9	2·2
Rahun, near Etawah	19·4	3·7	2·1
Bignor, near Hurdwah, ♀	19·1	3·9	2
Urbora Glen Afuri, ♂	20·6	4	2
Secunderabad, ♀	18·5	3·8	1·9
Bengal	20·6	4	2·2
"	20·5	3·9	2·2
"	18	3·9	2·1
" ♀	18·1	3·7	2

	Wing. in.	Tarsus. in.	Middle toe *s. u.* in.
Murshedabad*	16·6	3·5	1·8
Mussoorie, ♂	19·6	4·1	2·3
Mirzapore, ♂	18·5	4	1·9
South of Godavery, near Bhadrachallam, ♂	18·1	3·5	2
Ibidem, ♀	18·8	3·8	2·2
Godavery valley, ♀	18	3·9	2
Madras	18·4	3·7	2·2
"	18·5	3·6	2

I may add that the birds which I have been kindly permitted to examine, and which are included in the above list, are contained in the British, Norwich, and Liverpool Museums, and in the collections of the Marquis of Tweeddale and of Canon Tristram; the list also includes a few specimens in the possession of Mr. Burton, bird-stuffer, of Wardour Street, London.

The following measurements of Indian specimens are given by Mr. Hume†.

	Wing.	Tarsus.
North-west Himalayas	18	4
Saharunpoor district, ♂	19·245	
" " ♂	19·5	
" " ♂	20·25	
" " ♀	21	
Sirguja, ♂	18·4	4·2
Bugola, near Calcutta	16·4	3·5
Travancore hills, ♂ adult	17	3·75
Ibidem, ♂ young, just beginning to pass into adult plumage	15·75	3·87

The late Dr. Jerdon gave the following measurements of the type of his *Buteo* (*Spilornis*) *melanotis*, which "was killed at the foot of the Neilgherries," the sex not being recorded:—wing 16, tarsus 3·8, middle toe *s. u.* 1·7‡.

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* Mr. Sharpe, who refers, under the head of *S. melanotis*, to this specimen, which was collected by Col. Cobbe, and is preserved in the British Museum, makes the measurement of the wing 16·8, and that of the tarsus 3·65.

† *Vide* 'Rough Notes,' p. 226; also 'Stray Feathers,' for 1874, p. 380, and for 1876, p. 358.

‡ *Vide* 'Madras Journal,' vol. xiii. p. 167.

I have already alluded to the circumstance of Mr. Swinhoe having met, in the island of Hainan, with a *Spilornis* considerably smaller than that which he had found at Amoy. In 'The Ibis' for 1870 that gentleman proposed the specific name of *rutherfordi* for the *Spilornis* of Hainan; and at p. 86 he gave the dimensions of five specimens which he obtained in that island, but without recording their sexes. In these examples the measurement of the wing, as given by Mr. Swinhoe, range from 16·25 to 17 inches*, that of the tarsus from 3·75 to 4·25, and of the middle toe *s. u.* from 1·9 to 2·3.

Mr. Swinhoe also quoted, for comparison, the dimensions of a *Spilornis* from Pachebouri, Siam, which is preserved in the Norwich Museum: on recently remeasuring this example, I made its wing 18·1, the tarsus 3·6, and the middle toe s. u. 1·9, these dimensions being a little different from those given by Mr. Swinhoe as the result of a former measurement which we jointly made of this specimen.

Examples of somewhat similar size occur in Burmah; the following measurements were taken by myself from Burmese specimens in the collection of the Marquis of Tweeddale:—

	Wing. in.	Tarsus. in.	Middle toe *s. u.* in.
♂, Kyouk Kyee, British Burmah	17·1	3·5	2·1
♂, Mong, British Burmah ..	17·8	4	1·9
♂, Tonghoo	17	3·5	1·9
♀, Tonghoo (immature) ..	17·7	3·8	2·2
(*The sexes of the following are unrecorded.*)			
Tonghoo..................	17·3		2·1
Rangoon	17	3·6	2
„ (immature)	16·5	4	2
Thayetmyo	18·6	3·9	2·2

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* Mr. Sharpe, however, at p. 289 of his volume, quotes the measurement of the wing in one of these specimens, an adult, now preserved in the British Museum, as 17·8. It may be well to mention that, of the remaining four specimens, one adult is in the Norwich Museum, another in the possession of Canon Tristram, whilst the remaining adult and the immature bird were retained by Mr. Swinhoe in his own collection.

Mr. Hume gives the following dimensions of a female from Thayetmyo—wing 18, tarsus 4·05; and remarks, "Birds from Thayetmyo are the true *cheela*, a little smaller, no doubt, than the Himalayan specimens, but with wings varying from 18 to 19 inches in females, and of the true *cheela* type; further south this species appears to be entirely replaced by *S. rutherfordi*"*.

Mr. Hume adds the dimensions of four specimens which he considers referable to *S. rutherfordi*; but as he does not state where they were killed, I do not transcribe these measurements. Mr. Hume has, however, subsequently recorded† another and more northerly locality for the *Spilornis* which he identifies with *S. rutherfordi*, viz. North-east Cachar, and has noted a female from there as "having the wing only 16·75."

The ordinary adult plumage of *S. undulatus* agrees very well with Mr. Sharpe's description‡ of the "mature female;" but the statement in the succeeding paragraph, that in the adult bird the chest is "perfectly uniform brown, with no trace of cross-barrings on the under surface," is one the universal applicability of which I doubt—specimens from Northern India in which the breast is entirely free from dark transverse vermiculations being so rare that I can scarcely believe that every adult ultimately attains this dress.

Mr. Sharpe's description appears to have been taken from a specimen which had not newly moulted: in those adults in which the plumage has been quite newly acquired, all the lower parts, from the crop downwards, are usually, and probably always, much more decidedly tinged with rufous than is indicated in Mr. Sharpe's description. This rufous tint appears to fade rapidly; and it almost entirely disappears before the time of the next moult arrives, except on the flanks and wing-linings, where, the feathers being protected when the wings are closed, the rufous tint is, in consequence, much more permanent. Such a rufous-tinted specimen, obtained at Agra, is well described by Mr. Carleylle, as quoted at p. 228 of Mr. Hume's 'Rough Notes;' and a beautiful specimen in this phase of plumage was, subsequently to the publication of Mr. Sharpe's volume, presented to the British Museum by Captain Pinwill, who procured it in Bengal. This is the largest of the Bengal specimens noted in the foregoing list, and it is also the most rufous example of this species which has come under my notice.

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* *Vide* 'Stray Feathers,' 1875, p. 28.

† *Vide* 'Stray Feathers,' 1877, p. 10.

‡ *Vide* Catalogue, p. 288. This description is slightly obscured by what seems to be a clerical error, the words "rest of under surface" appearing twice over, apparently in consequence of some such accident.

The white abdominal ocellations in *S. undulatus* are frequently somewhat obscured by the partial overlapping of the feathers; and when the plumage is much worn, they are rendered still less conspicuous by the fading of the dark coloration of the surrounding portions of the feather. This remark equally applies to the adult specimens of the smaller race which Mr. Swinhoe obtained in Hainan, and to most others of similar size which I have seen from Burmah and Central India.

Of all the specimens of the above races which have come under my observation, that in which the ocellations are the most conspicuous is a Formosan bird in the Norwich Museum*. In another Formosan adult, and also in an adult male from Amoy, which Mr. Swinhoe retained in his own collection, the white spots are well marked, but not so remarkably as in the Formosan specimen at Norwich. The latter, however, is almost equalled in this respect by the example from Siam in the Norwich Museum, and also by Lord Tweeddale's specimen from Khalee Gungee, in Assam. The two other examples from Assam, which I have examined, do not possess this peculiarity; neither have I seen any Indian specimens fully equalling in this respect the three specially marked examples above alluded to. The two most clearly spotted Indian specimens which have come under my notice are Captain Pinwill's rufous-breasted bird from Bengal, and Col. Cobbe's small specimen from Murshedabad, both of which are preserved in the British Museum. Two Madras specimens, which I also examined in the British Museum, are unfortunately in immature dress, and therefore unavailable for the present comparison.

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* This specimen is also remarkable for having the upper pale bar on the tail more distinct, and the lower one narrower (being only one inch in breadth) than is usual in Indian specimens of *S. undulatus*. I regret that I have preserved no notes as to the markings on the tail in other Formosan examples.

The entirely black chin seems to be a peculiarity of the largest form of *Spilornis*, to which perhaps the appellation of *undulatus* should be limited; in smaller specimens the black on this portion of the plumage is either more or less tinged with grey, or is replaced by slate-colour or by brown*, but, I think, most frequently by the former.

It may be convenient here to allude to the curious fact that the nestling of *S. undulatus* appears to resemble the adult bird much more closely than it does the immature bird in the second plumage. Such is certainly the case with a nestling from Nepal, preserved in the British Museum, and briefly described at p. 287 of Mr. Sharpe's volume; and a similar phenomenon also occurs in another species of this genus, *S. bido* of Java, as may be seen on reference to the representation of a Javan nestling given by Professor Schlegel in his 'Valk-Vogels,' pl. 22. fig. 3.

Specimens of *Spilornis* from Central and Southern India are so much scarcer in this country than those from Northern India, that I have not seen a sufficient number of such examples to be able to form a satisfactory opinion as to the species to which they should be assigned; but I think it may be useful to transcribe the following observations from p. 42 of Mr. Hume's volume on the Nests and Eggs of Indian Birds, published in 1873:—"The Lesser Indian Harrier-Eagle, which I have as yet received only from Ellore, Raipoor, Sumbulpoor, and Dacca, and intermediate localities, differs perceptibly fron *S. cheela* of Upper India: the wings of the latter vary in the males from 18·5 to nearly 20 inches, and in the females from 19·5 to nearly 21; while in the present species they vary in the males from 17 to barely 18 inches, and in the females from 18 to 18·5 inches."*

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* The chin is brown in two of the adults of *S. rutherfordi* from Hainan; I have no memorandum of its colour in the remaining specimens from that locality.

With reference to the above passage, I may remark that the preceding pages contain the measurements of one specimen from North-west India, one from Darjeeling, and two from Nepal (all adult or very nearly so, and, from their localities, presumably referable to *S. undulatus*), in which the measurements of the wing fall short of the minimum assigned by Mr. Hume to the larger race,—and also of two Bengal specimens (viz. that from Moorshedabad, which is a fully adult bird, and that from Bugola), as well as of Dr. Jerdon's type of *S. melanotis*, from the foot of the Neilgherries, which seems not to have been fully adult—in all three of which the measurement of the wing is less than Mr. Hume's minimum for the smaller race, as given in the above passage; but subsequently Mr. Hume writes, "In *rutherfordi* the wing varies from 16·25 to 17·75"†. On the whole, I am disposed to think that *S. rutherfordi* of Hainan may be considered to be specifically identical with birds of similar size which occur in some parts of Burmah, and probably also with the race inhabiting Central India, and perhaps to be separable, as a subspecies, from the larger *S. undulatus*, though neither the structural nor the geographical limits of demarcation between the two appear to admit of very precise definition.

The measurements of Dr. Jerdon's type specimen of *S. melanotis*, from the foot of the Neilgherries, seem to indicate that a third and still smaller race may occur in some parts of Southern India, and may perhaps prove identical with that inhabiting Ceylon, for which the late Mr. Blyth proposed the specific name *spilogaster*.

I have examined fifteen specimens of *Spilornis* from Ceylon, in which the measurement of the wing ranged from 15·1 inches to 16·5, that of the tarsus from 3·1 to 3·6, and of the middle toe *s. u.* from 1·7 to 2·1; besides these I have seen one in the British Museum from Newara Ellia, in Ceylon, with the following dimensions—wing 14·4, tarsus 3·5, and middle toe *s. u.* 1·8; this specimen was changing from immature to adult dress; but the wings appeared to be fully grown.

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* *Cf.* 'Stray Feathers' for 1876, p. 358.

† *Vide* 'Stray Feathers' for 1874, p. 147.

On comparing the *Spilornis* of Ceylon with that of Northern India as regards coloration, I observe a much larger proportion of specimens of the former in which the dark transverse vermiculated markings on the breast are either altogether absent or much restricted in their extent. In the Ceylonese bird the white ocellations are, on an average of specimens, much more conspicuous and well defined than in the North-Indian race, and the brown colour surrounding these spots is much less tinged with rufous in newly assumed feathers, and with drab in those that are faded, and is more pervaded with a hue of dark umber; the throat in the Ceylon bird, in adult specimens, to which my remarks throughout apply, is also, so far as I have observed, always decidedly tinted with slate-colour.

The dimensions of the *Spilornis* of Ceylon are very similar to those of *S. davisoni* from the Andamans. Through the kindness of the Marquis of Tweeddale I have had the opportunity of examining five Andaman specimens of this recently described race: in the largest of these the wing-measurement was 16·25 inches*, in the smallest 15·25; the length of the tarsus in all the specimens was 3·5, and that of the middle toe *s. u.* 2 inches in four of them, and 1·85 in the remaining one.

The character of the markings in these birds is certainly nearer to that of the North-Indian than to that of the Ceylonese race: they all of them exhibit the vermicular transverse barring on the upper breast and throat; but in one of them some new feathers which are appearing on the breast are destitute of these marks, and are of a darker hue than the old plumage to which they are adjacent.

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* In 'Stray Feathers' for 1874, at p. 147, Mr. Hume gives the maximum measurement of the wing in *S. davisoni* as 15·5 inches; but from a note to p. 65 of 'Stray Feathers' for 1877, it would seem that there is a slight difference in the mode of measuring the wing adopted by Mr. Hume and by myself.

I have examined two adult specimens of *Spilornis* from Penang, two from Malacca, and one from Singapore, all of which come so close to the Andaman specimens of *S. davisoni*, that I can hardly think them separable from it; the two Penang birds, in particular, seem only to differ from *S. davisoni* in wanting the white external edge to the wing-lining, which Mr. Hume notes as a constant character of *S. davisoni**.

The following measurements, taken by myself, may be worth recording:—

	Wing: in.	Tarsus. in.	Middle toe *s. u.* in.
In the collection of the Marquis of Tweeddale.			
Adult from Malacca	15·25		1·8
" "	15·2	3·1	1·8
In the Norwich Museum.			
Adult from Penang	15·5	3·25	1·8
" "	15·3	3·2	1·8
Adult from Singapore	15·2	3·3	1·7
Immature from do., marked ♂ ..	14·6	3·3	1·7
" " marked ♀ ..	14·8	3·2	1·8

The Norwich Museum also possesses four examples of *Spilornis* from the island of Sumatra, three of which are fully adult, and the fourth very nearly so; the following are the measurements of these specimens:—

	Wing. in.	Tarsus. in.	Middle toe *s. u.* in.
♂	14·9	3·2	1·5
♂	14·8	3·3	1·65
Sex not recorded	15·4	3·5	1·7
" "	16·5	3·5	1·8

Two of these specimens closely resemble in plumage the ordinary *Spilornis* of Ceylon; but a third is less clear in its ocellations, and inclines, in the character of its markings, to the specimens which I have seen from Malacca and Singapore; the fourth specimen, which is just attaining its adult plumage, is a very clearly spotted bird, with the brown portions of its plumage darker than is usual in Ceylonese specimens, and approaching, but not equalling, in this respect, the dark race peculiar to the island of Java.

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* *Vide* 'Stray Feathers' for 1873, p. 306, and for 1874, p. 147.

I have recently examined eleven specimens of *Spilornis* from Java, all adults, or very nearly so, with the following results as to dimensions:—longest measurement of wing 16·6 inches, shortest 15·2; longest of tarsus 3·6, shortest 3·3; longest of middle toe *s. u.* 2, shortest 1·9.

The *Spilornis* of Java is readily distinguished from those of Ceylon, Singapore, Malacca, and Sumatra (with the two latter of which it is associated by Mr. Sharpe), by its much darker ground-colouring; this, with the exception of a tinge of dark slate-colour on the chin and cheeks, is of a deep rich purplish brown, upon which the white spots of the underparts show very conspicuously and distinctly.

The specific name of *bacha,* under which Mr. Sharpe unites the *Spilornis* of Java, of Sumatra, and of Malacca, is clearly not applicable to that of Java, as may at once be seen by comparing the Javan bird with Le Vaillant's plate of "Le Bacha." His figure is more like the *Spilornis* of Sumatra and Malacca, especially the latter; but, in the absence of any authentic information as to the locality of the specimen from which it was drawn, I believe it is impossible to say with certainty to which of the nearly allied races, other than that of Java, the specific name "*bacha*" can correctly be applied; and I think, under these circumstances, it will be best to discontinue the use of that name altogether.

The *Spilornis* of Java is already provided with a distinct name, being the *Falco bido* of Horsfield. The Ceylonese *Spilornis* should stand as *spilogaster* of Blyth, unless it should hereafter be proved identical with *albidus* of Temminck and with *melanotis* of Jerdon, or with one of these forms, if there be any difference between the bird found in Pondichery and that inhabiting the Neilgherries.

The *Spilornis* of Sumatra, I am disposed to think, must be referred to the same species as that inhabiting Ceylon; and between the Sumatran bird and *S. davisoni* of the Andamans the birds found at Penang, Malacca, and Singapore are so intermediate that I am at a loss where to draw the line of demarcation between them.

Contrary to the opinion which I entertained some years since, I am now fully convinced that *S. elgini* of the Andamans is a very good and distinct species. Mr. Sharpe describes it as differing "in no respect" from the *Spilornis* of Java, "excepting that it is very much blacker." But this is not quite accurate; for although the average of specimens of *S. elgini* are somewhat darker than the average of those of *S. bido,* I have seen several adult specimens of the latter as dark as, or even darker than, some of *S. elgini.* A much more definite distinction is the comparative narrowness of the transverse pale bars on the primaries and of the lower transverse pale bar on the tail, as pointed out by Lord Tweeddale in 'The Ibis' for 1873, pp. 299, 300; another difference is, that in the adults of *S. elgini* the white spots almost invariably extend about two inches higher up on the throat than in those of *S. bido.*

I have had the opportunity of seeing eight Bornean specimens of *S. pallidus* in the British and Norwich Museums, and in the collection of the Marquis of Tweeddale, and I feel no doubt that this also is a good and distinct species; but I do not think the colouring of the adult in the figure given in Mr. Sharpe's volume is entirely satisfactory. It seems to me that in this figure the pale bluish grey of the chin, upper throat, and ear-coverts is not sufficiently conspicuous, that the scapulars are somewhat too dark, and that the abdominal and tibial ocellations are represented as smaller than they ought to be, and the latter not sufficiently as grouping themselves in the form of bars.

Mr. Sharpe gives the measurement of the wing in the adult male of this species as 14 inches; but in one such specimen, preserved in the British Museum, the wing only measures 13·1.

Another still more distinct species is *S. minimus,* from the Nicobar Islands, inserted in the Addenda at p. 459 of Mr. Sharpe's volume, from 'Stray Feathers' for 1873, p. 464. To the full description there given by Mr. Hume of this interesting little *Spilornis* I have nothing to add, except that, having been indebted to the kindness of Lord Tweeddale for the opportunity of examining a series of five specimens of this bird, I was struck with the considerable prolongation of the hooked point of the upper mandible, which appeared to me to be proportionally greater than in the other species of this genus. In one of these specimens this prolongation was so remarkable as to remind me of the similar but still more marked curvature and prolongation of the upper mandible in *Leptodon uncinatus* of tropical America.

Of the remaining species of the genus *Spilornis* (*S. holospilus*, *S. rufipectus*, and *S. sulaënsis*), I have nothing to add to Mr. Sharpe's remarks, except to observe that it seems to me that *S. sulaënsis* should, at most, be regarded only as a subspecies of *S. rufipectus*, from which, judging by the specimens of both preserved in the Norwich Museum, it only differs, either in its immature or in its adult stage, by its slightly smaller dimensions.

[To be continued.]

VIII.—*Notices of recent Ornithological Publications.*

1. *'Transactions' of the New-Zealand Institute.*

Volume nine of the 'Transactions and Proceedings of the New-Zealand Institute,' which we have just received, contains the following five ornithological papers by Dr. Buller:—

(1) "On the Ornithology of New Zealand," p. 327. [Contains notes on various species, and adds *Diomedea cauta*, Gould, to the New-Zealand list.]

(2) "On the Occurrence of the Royal Spoonbill (*Platalea regia*)," p. 337. [Adds this Australian Spoonbill to the list.]

(3) "Observations on a Species of Shag inhabiting Queen-Charlotte Sound." [Relates to *Phalacrocorax finschi*, lately described by Mr. Sharpe.]

(4) "On a Tendency to Deformity in the Bill of *Nestor meridionalis*."

(5) "On the Alleged Intercrossing of *Ocydromus earli* and the Domestic Fowl."

With all deference to Dr. Buller, we put these stories on a par with the oft-repeated fable of the hybrids between the domestic duck and the fowl. That *Ocydromi* will tread hens if they get a chance, we do not doubt; but that their spermatozoa will impregnate the latter's eggs has, as yet, not been shown satisfactorily. Dr. Buller should obtain examples of the alleged produce for the dissecting-knife.

Besides Dr. Buller's papers the same volume contains:—"Remarks on Dr. von Haast's Classification of the Moas," by Captain F. W. Hutton, Director of the Otago Museum (*ibid.* p. 363), which are worthy of attention; an account of "a Second Discovery of Moa-Bones at Hamilton," by B. S. Booth (*ibid.* p. 365); some "Notes on the Occurrence of a Curlew (*Numenius cyanopus*, Vieillot) in New Zealand," by Julius von Haast, Ph.D., F.R.S. (*ibid.* p. 427); and "Notes on the Antarctic Petrel (*Priocella antarctica*)," by James Hector, C.M.G., M.D., F.R.S. (*ibid.* p. 464).

2. *Lawrence on New Birds from the Island of Dominica.*

[Descriptions of new Species of Birds from the Island of Dominica. By G. N. Lawrence. Ann. N.Y. Acad. Sci. i. pp. 46–49.]

We are glad to learn that an exploration of some of the least-known of the West-India Islands, for the purpose of elucidating their natural history, has been undertaken by Mr. Fred. A. Ober, of Beverly, Massachusetts, under the auspices of the Smithsonian Institution. As yet his investigations have been confined to Dominica, whence two collections of birds have been received, and sent to Mr. Lawrence for determination.

In the present paper Mr. Lawrence describes three new species contained in the collection—namely *Thryothorus rufescens*, *Dendrœca plumbea*, and *Myiarchus oberi*. Besides these novelties Mr. Ober obtained a series of *Thalurania wagleri*, hitherto supposed to be from "Brazil," but which is probably peculiar to the island.

A complete list of the avifauna will be given when the rest of the collections are received. Mr. Ober is now gone on to Antigua.

3. *Ridgway on the genus* Leucosticte.

[Sexual, Individual, and Geographical Variation in the Genus *Leucosticte.* By R. Ridgway. Field and Forest, ii. Sept. 1876.]

Quantity of specimens we should have thought would at least have tended to produce unanimity of opinion as regards the specific value of obscure species of birds. But that this is not always the case is shown by the diverse views held by Mr. Ridgway and Mr. J. A. Allen upon the subject of the specific distinctions of the members of the genus *Leucosticte,* specimens of which by the hundred have been examined by both disputants. Though the species of *Leucosticte* are not unrepresented in our collections, thanks to the generosity of our American friends, we have not sufficient materials in this country to form an independent opinion on so delicate a point as to whether certain forms possess well-defined sexual differences or not. Mr. Ridgway seems to have gone very thoroughly into the subject; and so also has Mr. Allen; and we have no doubt the truth will be threshed out between them.

4. *Ridgway on the Birds of Guadalupe Island.*

[The Birds of Guadalupe Island discussed with reference to the present Genesis of Species. By R. Ridgway. Extracted from the Bull. of the Nuttall Orn. Club, ii. July 1877.]

This is an interesting paper inspired by a further consideration of the birds inhabiting the little island of Guadalupe, which lies off the coast of California. A visit to it by Dr. E. Palmer a short time ago brought to light a curious series of facts relating to its fauna and flora, the birds being found, though generically the same, to be all specifically different from their continental allies. Mr. Ridgway now examines the avifauna, after the plan adopted by Salvin in his recent memoir on the birds of the Galapagos Islands (Trans. Z. S. ix. p. 447 *et seqq.*), and comes to the conclusion that the immigration and differentiation of species in Guadalupe Island have been substantially the same as in the Galapagos archipelago, but that the process of change, either through shortness of time or slowness of operation, has not gone so far as to produce genera distinct from their continental allies. As has been frequently asserted, the effect of a residence in an oceanic island upon birds is to increase the size of their bills and feet, to shorten the wings and tail, and to darken the colours; this rule appliess strictly to the birds of Guadalupe Island. The change, as Mr. Ridgway points out, has not as yet proceeded far; but enough is seen to show that the law at work in most parts of the world is in action here also.

5. *Godwin-Austen on three new Species of Birds from Assam.*

[Description of three new Species of Birds of the Genera *Pellorneum*, *Actinura*, and *Pomatorhinus*, lately collected in the Neighbourhood of Saddya, Assam, by Mr. M. J. Ogle, of the Topographical Survey. By Major H. H. Godwin-Austen. J. A. S. B. xlvi. pt. ii. p. 41 (1877).]

The three species here described are:—

(1) *Pellorneum pectoralis* (p. 41), from Saddya.—In his notes on this species Major Godwin-Austen refers to the vexed question of *Pellorneum tickelli*, Blyth; but his views here expressed are altered in his subsequent paper.

(2) *Actinura oglei* (p. 42): shot on Manbúm Tila, on the Tenga-Pani river, near Saddya, at an elevation of 800 feet.—The species is compared with *Turdinus guttatus*, Tickell, a bird which Major Godwin-Austen considers to be incorrectly placed in the genus *Turdinus*.

(3) *Pomatorhinus stenorhynchus* (p. 43): Manbúm Tila, on the Tenga-Pani river, near Saddya (800 feet).—This species has a slender bill approaching that of *Xiphorhamphus*, its coloration recalling *P. ferruginosus*.

In the same collection are other new species, the names of which are given here, but the description of which is reserved for a future paper.

6. *Godwin-Austen on some species of* Pellorneum *and* Pomatorhinus, &c.

[Some Notes on Birds of the Genera *Pellorneum* and *Pomatorhinus*, with a Description of a Variety of *Chleuasicus ruficeps*, Blyth. By Major H. H. Godwin-Austen. Proc. A. S. B. June 1877.]

In this paper Major Godwin-Austen gives the result of an examination of the type of *Pellorneum tickelli,* Blyth. He refers it to the genus *Alcippe,* and shows that the species is quite distinct from *P. subochraceum,* Swinh., to which it had been united. But on this question see Lord Tweeddale's paper, Ibis, 1877, p. 451, and Major Godwin-Austen's remarks, *posteà,* p. 115.

The note on *Pomatorhinus* refers to *P. hypoleucus,* Blyth, var. (=*P. tickelli,* Hume), and to the bird described by Mr. Hume as *P. inglesi,* which seems doubtfully distinct from the true *P. hypoleucus,* of which the types are in the Calcutta Museum.

The *Chleuasicus* noticed by Major Godwin-Austen, having a black eyebrow, not present in Blyth's type of *C. ruficeps,* is considered a variety of that species, and is described under the name of *C. ruficeps,* var. *atrosuperciliaris.* The specimen is from Saddya, Assam.

7. *Harvie Brown on the Distribution of Birds in North Russia.*

[Ann. & Mag. Nat. Hist. ser. 4, vol. xix. p. 277, et vol. xx. pp. 1, 180, 494.]

These papers give an analysis of the distribution of Russian birds found north of 58° N. lat., the district being divided into two—a northern and a southern division. The data concerning the birds of the northern division are mainly derived from the author's and Mr. Seebohm's paper published in the volume of this Journal for 1876. For the data relating to the birds of the southern division a list of authorities is quoted.

Lists of the two sets of birds are given with columns attached filled in with symbols denoting the rarity or reverse of the birds observed, and other matters relating to their distribution and migration; and one of the chief objects of the paper is to endeavour to establish a kind of geographical nomenclature, which shall serve to reduce observations to a common notation, and thus render more easy and more certain generalizations on geographical distribution.

The attempt is a very laudable one; and the extreme difficulty of rendering the manipulation of the subject at once accurate and concise will not, we trust, deter other ornithologists from following out Mr. Harvie Brown's suggestions. At the same time we cannot forbear expressing our dislike to the use of symbols for this kind of investigation, as being at once an extra tax upon the memory and too inelastic to be of much service in the long run.

Mr. Harvie Brown has worked out his subject with much patience; and we hope that the knowledge that future observations will certainly modify, probably to a considerable extent, the conclusions he here draws, will not discourage him from following up his investigations.

8. *Barboza du Bocage's 'Ornithology of Angola.'*

[Ornithologie d'Angola. Ouvrage publié sous les auspices du Ministère de la Marine et des Colonies par J. V. Barboza du Bocage. Première partie. Royal 8vo, pp. 256. Lisbon: 1877.]

It is well known to students of West-African ornithology that Professor Bocage has long paid special attention to the birds of the Portuguese possessions in Africa, as is shown by the lists that have appeared from time to time in the 'Jornal de Sciencias da Academia de Lisboa.' These lists were drawn up from collections made in Angola by Senhor Anchieta, who has worked industriously at the birds of that district for upwards of ten years.

Much additional knowledge of the birds of Angola has been derived from the labours of Mr. Monteiro, who for some time collected in that country. These and other materials Prof. Bocage has worked up into the present book, which thus forms a very complete *résumé* of the birds of Angola, and an important addition to the literature of African birds. Great care has been bestowed upon the compilation of the book. The synonymy and references are full, but not overloaded, as is too often the fashion, with useless references. On the contrary, these seem to have been selected with judgment for their bearing upon the special subject to which they apply. A full description (perhaps too full) of each species is given, and a paragraph containing the details of the distribution of every bird, and other matter.

As was to be expected, the greater part of the new species in the collections sent to Lisbon from time to time have already been described; but we notice three new names in this work, two of them applied to Swifts—*Cypselus toulsoni* (p. 158) and *C. finschi* (p. 156), the former from Loanda, the latter from Angola,—and one to a Shrike, *Dryoscopus neglectus*, from Angola and Damaraland. The latter bird has frequently been called *D. major* by writers on South-African ornithology. Four plates, drawn by Keulemans and prepared in this country, accompany this part, on which are figured *Crateropus hartlaubi* and *C. gutturalis* (pl. i.), *Platystira minulla* (pl. iii.), *Telephonus anchietæ* (pl. iv.), and *Gyps africanus* (pl. ix.).

This book, so far as Portugal is concerned, redeems the reproach that no ornithological work of importance has proceeded from the Iberian peninsula since the days of Azara. That it does so is a credit to Prof. Bocage and to the Government Office under whose auspices his work appears.

9. *Dr. Brüggemann on Birds from S.E. Borneo.*

[Ueber eine Vögelsammlung aus Südost-Borneo. Von Dr. F. Brüggemann. Abh. nat. Vereins zu Bremen, vol. v. p. 453.]

This is an account of a collection of birds sent to the Darmstadt Museum from Moera Teweh, in the interior of S.E. Borneo. There were 254 skins, referable to 93 species. Two species (*Hemilophus fischeri* and *Cyornis turcosa*) are described as new. But the prize of the collection was *Polyplectron schleiermacheri* (*cf.* Ibis, 1877, p. 494), of which fine and most distinct species a figure is now given.

The species called "*Batrachostomus stellatus* (Gould)," *t. c.* p. 456, Dr. Brüggemann has subsequently distinguished as *B. adspersus* (Ann. & Mag. N. H. ser. 4, vol. xx. p. 178, Sept. 1877).

10. *Dr. Brüggemann on Birds from Celebes.*

[Nachträgliche Notizen zur Ornithologie von Celebes. Von Dr. F. Brüggemann. Abh. nat. Vereins zu Bremen, vol. v. p. 464.]

This is a supplement to Dr. Brüggemann's former article on the same subject (Abh. nat. Ver. zu Bremen, v. p. 35), and gives an account of new collections sent to the Darmstadt Museum from Celebes. Four species are thus added to the list; and the *Chalcophaps* previously mentioned as *C. stephani* is now designated *C. wallacii,* sp. nov. *Eudynamis melanorhyncha* is also added to the ornis of the Sanghir Islands.

11. *Gould's 'Birds of New Guinea.'*

[The Birds of New Guinea and the adjacent Papuan Islands, including any new species that may be discovered in Australia. By John Gould F.R.S. &c. Part V. Folio. London, 1877. Published by the Author, 26 Charlotte Street, Bedford Square, W.C.]

Mr. Gould's annual part of the 'Birds of New Guinea' contains, as usual, figures of many most interesting species, as will be seen by the subjoined list:—

Manucodia comrii.
—— chalybea.
Casuarius picticollis.
—— westermanni.
Monarcha kordensis.
—— melanonota.
Geoffroyius simplex.
Trichoglossus musschenbroekii.
Psitteuteles rubronotatus.
—— subplacens.
Loriculus aurantiifrons.
Chalcites meyeri.
Myzomela cruentata.

12. *Gould's 'Birds of Asia.'*

[The Birds of Asia. By J. Gould, F.R.S. &c. Dedicated to the Honourable East-India Company. Part XXX. Folio. London: 1877. Published by the Author, 26 Charlotte Street, Bedford Square, W.C.]

The same may be said of the past year's number of the 'Birds of Asia,' which gives us portraits of the following species:—

Pitta cærulea.
—— cucullata.
Chalcites hodgsoni.
—— xanthorhynchus.
Lobiophasis castaneicaudatus.
Gallus sonnerati.
Chrysocolaptes xanthocephalus.
Sarcophanops steerii.
Oriolus chinensis.
Carduelis orientalis.
Parus elegans.
Ægithalus flammiceps.
Dicæum dorsale.

Of these the second species of *Lobiophasis* and the rare and newly discovered *Sarcophanops* are of the greatest interest to ornithologists. We regret to see that Mr. Gould has been misled into calling an Oriole only found in the Philippines *Oriolus chinensis* (*cf.* Tweeddale, P. Z. S. 1877, p. 760). This would indeed be a case of *lucus à non lucendo*!

13. *David and Oustalet's 'Birds of China.'*

[Les Oiseaux de la Chine. Par M. l'Abbé Armand David, M.C., Ancien Missionnaire en Chine, et M. E. Oustalet, Aide-Naturaliste au Muséum. Avec un Atlas de 124 planches. Paris: Masson, 1877.]

The name of Armand David is now familiar to zoologists as that of one of the most energetic and successful of the travelling naturalists of the present day; and the great feats that he has accomplished in China are well known to most of us. Of his narrative of his last expedition into the interior of that country we gave some account last year*; but we have now to notice a much more important work, in which M. David has had the assistance of M. Oustalet, the Ornithologist of the Jardin des Plantes. This is nothing less than a complete *résumé* of all the known birds of the Chinese Empire—a considerable undertaking, considering the number of species contained in the Chinese ornis, and one of great usefulness, looking to the way in which the literature concerning them is scattered about in various journals and periodicals.

By the exertions of our authors this is all now reduced into a uniform shape, or at all events correctly indexed; while an accompanying volume of plates (although the figures are not of the highest style of art) gives us portraits of most of the rarities that have lately been brought to light by the exertions of Père David.

The total number of species included in the present work as inhabitants of China is 807, of which 158 are likewise found in Europe, and about 249, so far as is hitherto known, are peculiar to China. Of each of these 807 species we have the principal synonyms, a short description, and the chief facts of its history indicated; so that the work will be a most useful one to students of the Chinese avifauna. The following species appear to be now described as new for the first time—

* See 'Ibis,' 1877, p. 117.

Herbivocula incerta (p. 246), *Locustella minor* (p. 251), *Suya parum-striata* (p. 259), *Oreopneuste affinis* (p. 257), *Corydalla kiangsinensis* (p. 311), and *Uragus lepidus* (p. 359). Two new genera are instituted:—*Moupinia* (p. 219), type *Alcippe pœcilotis*, Verr.; and *Spelæornis* (p. 229), type *Pnoëpyga troglodytoides*, Verr. The new genera and species indicated in Père David's 'Journal de mon troisième Voyage' (*cf.* Ibis, 1877, p. 118) are also more perfectly described.

14. *D. G. Elliot and A. Reichenow on the Ibises.*

[Review of the Ibidinæ, or Subfamily of the Ibises. By D. G. Elliot. P. Z. S. 1877, p. 477 *et seqq.*

Systematische Uebersicht der Schreitvögel (*Gressores*), einer natürlichen, die Ibidæ, Ciconidæ, Phœnicopteridæ, Scopidæ, Balænicipidæ und Ardeidæ umfassenden Ordnung. Von Dr. Ant. Reichenow. J. f. Orn. 1877, p. 113 *et seqq.*]

There are few groups of birds which admit of more varied treatment as regards their classification than the Ibises. The characters by which each species is marked are in most cases so trenchant that they have been looked upon by many authors as of generic value; hence we find that almost as many generic titles have been proposed for the members of the family as there are species to put into them. Again, other writers, viewing these characters as of specific or at most of subgeneric value only, group the whole of the species under one or two genera. In the two papers now before us each of these two extreme views are propounded. Mr. Elliot is the exponent of the former, and places the 25 species of Ibises he recognizes in 19 genera; whilst Dr. Reichenow classes all under three generic heads (including *Platalea*).

As neither of these authors has done more than draw the characters of his genera from external sources (Mr. Elliot using little else than the distribution of the feathers on the head and neck when defining his genera), we cannot consider either classification by any means final, and we have yet to look for sound definitions of the genera of the Ibidinæ.

Of the 19 genera employed by Mr. Elliot, three are introduced as new. The species recently described by Dr. Oustalet as *Ibis gigantea* is called *Thaumatibis gigantea*. The same author's *I. harmandi* is identified with Mr. Hume's *Geronticus davisoni,* and placed as *Graptocephalus davisoni.* The third genus proposed is *Lampribis,* with *L. olivacea,* Du Bus, as its type; this species is also figured (pl. li.).

Before leaving the genera we have one point to notice; and that is the application of the name *Falcinellus* by both authors, who attribute the first use of it to Bechstein (1802). A reference to Bechstein's work shows that that author called the Glossy Ibis *Numenius falcinellus,* and in no way employed the latter title in a generic sense. Failing *Falcinellus, Plegadis,* Kaup (Skizz. Entw. Gesch. p. 82, 1829), appears to stand next in order of date; and thus *Plegadis falcinellus* (L.) would be the correct name for the Glossy Ibis. As regards the synonyms of this species, Dr. Reichenow shows that *Scolopax rufa,* Scopoli, is an older title than *Numenius igneus* of Gmelin (Nov. Comm. Petr. 1771), and of course than *Numenius igneus* of the 'Systema Naturæ' of 1788, as Mr. Elliot gives it. Both authors are, we believe, right in referring the *Tringa autumnalis,* Hasselq., to this bird; and were it not that Hasselquist is not strictly binomial in his nomenclature, a claim might be set up for the adoption of *autumnalis* as the specific name of the Glossy Ibis, as the English edition of Hasselquist's 'Travels' bears the date of 1766, thus coming within the recognized pale.

We think Mr. Elliot in error in uniting the Australian *Ibis strictipennis* with *I. æthiopica*; for not only does geography reject such a view, but living birds in the Zoological Society's Gardens show characters which enable the two species to be recognized without fail, even by ordinary observers. Nor can we indorse Mr. Elliot's reasoning when he argues that a character possessed by a species only during the breeding-season, and not retained throughout the year, must therefore be considered as of no specific value.

Mr. Elliot gives us under each species a profusion of references, those under *Falcinellus igneus* filling up a page and a half. Still we miss some of the most important—such standard works as Burmeister's 'Systematische Uebersicht,' Pelzeln's 'Ornithologie Brasiliens,' and other books of equal merit finding no place in the crowd. Yet it is to these works, especially the latter, that we owe in a great measure our knowledge of the distribution of South-American birds.

Dr. Reichenow's paper, as its title shows, treats also of several other families besides the Ibises; but this portion we do not propose to notice, except to express our great regret that the system of changing every name that appears barbarous to our Teutonic brethren finds favour with Dr. Reichenow. So much has already been said on the subject in this Journal, that we need not do more than ask Dr. Reichenow what chance he seriously thinks the name *Ciconia dicrura*, which he has bestowed upon our old friend *C. maguari*, has of general acceptance.

15. *D. G. Elliot's Descriptions of new Species of Birds.*

[Ann. & Mag. Nat. Hist. ser. 4, vol. xx. pp. 169, 171, 404.]

In the current volume of the 'Annals' we find three short papers by Mr. Elliot, each containing a description of a new bird. The first (p. 169) relates to a supposed new species of *Lamprocolius* from the Gaboon, which is called *L. glaucovirens*. The type is in the Paris Museum, where Mr. Elliot had an opportunity of comparing it with Vieillot's type of *L. splendens*, its nearest ally.

The second speaks of a new species of Hornbill from the Congo, which Mr. Elliot proposes to call *Bucorvus pyrrhops*. The type is a living specimen in the Zoological Gardens at Rotterdam, Mr. Elliot's description having been chiefly drawn up from a coloured sketch of the head prepared for him by Mr. Keulemans.

In the last paper a new Humming-bird is described as *Amazilia lucida*, of which the habitat is "stated to be Columbia." In this paper Mr. Elliot expresses his opinion that the so-called genera *Pyrrhophæna*, *Erythronota*, *Saucerottia*, &c. are not really separable from *Amazilia*; and in this view he is probably correct. But we cannot altogether concur in his opinion that colour alone should be rejected as a character for generic separation in the Humming-birds. The lines which divide the groups of Humming-birds are so fine, and the characters which seem to point to evidently natural genera are so slight, that we are not in a position to reject arbitrarily any, whether based on colour or structure, that may serve our purpose. If the Trochilidæ are to be divided into any thing approaching the number of genera that have been proposed for them, we cannot afford to set aside any characters which, even if slight, have the merit of being definite.

IX.—*Letters, Announcements, &c.*

Mr. A. O. Hume sends us the following letter, and with it four skins of Indian birds for examination :—

Gentlemen,—The Marquis of Tweeddale recently addressed you a letter about *Pellorneum tickelli.*

I do not see that any advantage would result to ornithology from entering into any controversy with his Lordship; but it is desirable that the distinctness or otherwise of the species referred to should be established.

I send you separately, for inspection, a specimen of what I identify as *P. tickelli*—a bird that occurs equally in Burmah and Assam. I trust you will kindly state, at the same time as you publish this letter, your views as to this supposed species.

There are a good many supposed species the validity or otherwise of which it would be satisfactory to determine. I venture to forward, for your inspection, specimens of three of these besides the *Pellorneum*; and should you approve my proposals in this matter, I shall be glad to forward, from time to time, other specimens of similarly doubtful species.

A second species of which I send a specimen is *Trichastoma minor,* Hume, S. F. ii. 535, Oct. 1874. Is this identical with *Drymocataphus fulvus,* Wald. Ann. & Mag. N. H. June 1875, 401, or with *Turdinus garoënsis,* Godw.-Aust. J. A. S. B. xliii. 160, pl. viii. 1874 (read May 6th, published —?)? or is it possible that all three are the same? I may mention that this species is very variable in the extent of pale shafting to the feathers of the head, and in the colour of the lower parts, which in some are nearly uniform rufescent, while in others the middle of the throat and abdomen are white, or nearly so.

A third species is *Proparus dubius*, Hume, Pr. A. S. B. May 1st, 1874, 107 (when published ?), and S. F. ii. 447, June 1874. Is this identical with *Minla mandellii*, Godw.-Aust. Ann. & Mag. N. H. Jan. 1876 ?

A fourth species is *Minla rufogularis*, Mandelli, S. F. i. 416, July 1873. Is this identical with *Minla collaris*, Wald. Ann. & Mag. N. H. Aug. 1874 ?

Yours &c.,
A. O. Hume.

[In accordance with Mr. Hume's suggestion, we have had great pleasure in submitting the four specimens sent by him to the examination of Lieut.-Col. Godwin-Austen, who has kindly supplied the following notes on them.

As regards the question at issue between Mr. Hume and Lt.-Col. Godwin-Austen (whether *Turdinus garoënsis* or *Trichostoma minus* agrees best with Blyth's description of *Pellorneum tickelli*), we believe it impossible to come to a satisfactory conclusion. The size of the specimens sent by Mr. Hume seems to us to favour his view. But if the exact original types cannot be positively ascertained (as would seem to be the case from Lt.-Col. Godwin-Austen's remarks in Pr. A. S. B. June 1877), it would be better, according to our views, to reject the specific name *tickelli* altogether, and adopt the first name *certainly* applicable to each of these two birds.—Edd.]

(1) Mr. Hume's "*Pellorneum tickelli*, Blyth, ♂ (from Sadia, Assam)," is the same as my *Turdinus garoënsis* ♂, from the Dafla hills. Slight differences exist between it and my type; but I should hesitate to describe it as another species.

(2) *Trichastoma minor*, Hume (corr. *minus*), = *Pellorneum tickelli*, Blyth, = *Drymocataphus fulvus*, Walden. See my paper in Pr. A. S. B. June 1877, where I placed this bird in the genus *Alcippe*. It is very close to my *Turdinus garoënsis*, which inhabits the Assam hills, and has been compared with the type, from which it differs in being more rufescent in

tinge, and in the pale nearly white centre of the breast and throat.

(3) *Proparus dubius,* Hume, I have compared with ten examples, and find very close to *Minla mandellii,* Godw.-Aust.; but it is white beneath, and wants the streaked white-and-black feathers behind the ear-coverts, is smaller, more rufous, and less striate on the head. In my opinion it is a good representative race, in the far south, of the Assam form. It is a true *Minla* in every respect. In the same way *Minla castaniceps,* from Tenasserim, is paler below than the specimens from the Assam hills. Both these local races exhibit a variation equal in kind and degree, which is very interesting.

(4) *Minla rufogularis,* Mand., = *Alcippe collaris,* Walden. I have compared it with a large series of the latter; *rufogularis* has priority as the title. *Minla mandellii* is quite a different bird, and cannot be confounded with it. Its correct generic title is *Minla.*—H. H. G.-A.

We have also received the six subjoined letters:—

Boston, November 13, 1877.

Sirs,—My young townsman, Dr. James C. Merrill, U.S.A., stationed at Fort Brown, Texas, continues to make interesting discoveries in this border region. Among these are the eggs of *Molothrus æneus,* which you will find described in full in the 'Nuttall' for October. They are greenish white, and so far are found only in nests with eggs of a similar colour *.

He found last summer a colony of *Ibis guarauna* breeding in the swamps at the mouth of the Rio Grande. What he supposed to be *Parula americana* proves to be *P. pitiayumi,* a new bird to our already plethoric fauna. *Neocorys spraguei,* has been taken near Fort Brown (its most southern and eastern record).

In September last Dr. Merrill found a nest which, there is little doubt, belonged to a pair of *Amazilia cerviniventris* inside the enclosure of Fort Brown. "It was in the fork of a small, dead, drooping branch of a tree, on the edge of a path through a thicket. It was about seven feet from the ground, and contained the shrivelled body of a young bird. It is made of soft down from a high common about here, but of what plant is unknown to me, bound on the outside with cobwebs, and sparingly covered with lichens. Internally it measures less than an inch in depth. Its external depth is an inch and a half. This species is quite abundant on the reservation, frequenting dense thickets and narrow paths; it is restless and noisy, and is not easily obtained. It arrives in March, and leaves in October."

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* [See Robert Owen's account of the eggs of this bird, 'Ibis,' 1861, p. 61.—Edd.]

Yours, &c.,
T. M. Brewer.

Sirs,—I send you the following notes relative to the nesting of the *Zonotrichia coronata*, Baird, which I hope may not be without interest to the readers of 'The Ibis.'

The Golden-crowned Sparrow is one of our Pacific species, of whose history little is known. It is found in summer from California to Alaska, and in winter wanders as far south as Cape St. Lucas. Its most eastern point is Sierra Nevada, where it is known only as a straggler. Up to the present summer its nesting and eggs had remained unknown, the description given by Dr. Heermann of a supposed nest found near Sacramento being regarded as of questionable authenticity.

On the 14th of June, 1877, Mr. Ludwig Kumlien (son of the well-known ornithologist of Wisconsin, and now Naturalist with our expedition to establish an arctic colony), in Shosta County, California, on the banks of the Cloud River, was so fortunate as to secure the nest and eggs of this species, and the female parent.

The eggs were four in number, measure from 0·80 to 0·82 inch in length, and from 0·64 to 0·67 inch in their greatest breadth. They are of a rounded oval shape, and are but little more obtuse at one end than at the other. The ground-colour, like that of all the eggs of this genus, is a light green, and is generally quite distinctly to be seen, as the small blotches of reddish- and golden-brown, with which the whole surface is pretty equally and uniformly marked, are nowhere confluent or even numerous. These eggs very closely resemble the very lightly marked varieties of *Z. albicollis*, but are smaller and in their shape more spheroidal.

The nest has an outer diameter of 5 inches, a height of 3 inches; and its cavity is 2½ inches deep, with a diameter of the same dimensions at the rim. The base and periphery of the nest form a loosely interwoven mass of thin strips of bark, skeleton leaves, and coarse stalks and stems of plants. It is very thoroughly lined with fine wiry rootlets of wild plants and shrubs. It was in a low bush, just above the ground.

Evidently the eggs described by Dr. Heermann did not belong to a bird of this species; and the egg in the British Museum attributed to this Sparrow is incorrectly named, but it is not unlikely to be an egg of *Poœcetes gramineus*.

Yours &c.,
THOMAS M. BREWER.

233 Beacon Street, Boston.
October 10, 1877.

Northrepps, November 24, 1877.

SIRS,—During a recent visit to Newcastle I was enabled, through the kindness of Mr. Hancock, to examine two Buzzards which appear to me to be British-killed examples of *Buteo desertorum*. They are both in immature plumage, and remarkably resemble the dark-coloured phase of this Buzzard, of which specimens are occasionally sent to this country from Archangel. Both specimens are said to have been found to be males.

One of the two was killed at Bywell, near Newcastle, in 1830, and is now in Mr. Hancock's collection; its principal measurements are—wing 14·2 inches, tarsus 2·8, middle toe *s. u.* 1·3. The other was obtained at Tynemouth in November 1870, and is preserved in the Newcastle Museum; its measurements are—wing 14·7 inches, tarsus 2·7, middle toe *s. u.* 1·4.

I believe but one British specimen of this Buzzard has been previously recorded—that mentioned by Mr. Gould in his 'Birds of Great Britain,' and referred to in 'The Ibis' for 1876, p. 366.

I may add, that during my visit to Newcastle I also saw Mr. Hancock's curious Sparrowhawk, to which I referred in 'The Ibis' for 1875, p. 479, and that I agree with that gentleman in considering it to be an abnormal specimen of *Accipiter nisus*.

Yours, &c.,
J. H. GURNEY.

Northrepps, November 24, 1877.

SIRS,—I beg to forward for insertion in 'The Ibis' an interesting notice with which I have been favoured by Major Fitzgerald, of Framingham Hall, Norfolk, on the subject of a fine specimen of *Huhua nipalensis* which lived several years in his possession, and which I had an opportunity of inspecting after it was stuffed.

Mr. Roberts, an experienced birdstuffer in Norwich, by whom this Owl has been mounted, informs me that it proved on dissection to be a female, and that the irides were a rich hazel with a very slight ochraceous tinge.

Major Fitzgerald tells me that this species "is not strictly nocturnal in its habits."

Yours &c.,
J. H. GURNEY.

Huhua nipalensis.—This specimen was taken from the nest, in a tree, in the Darjeeling District, Himalaya, either in the year 1861 or 1862, and from that period until September 1877 lived in my possession.

As well as I can remember, the bird was a solitary nestling, and took several months to assume its first plumage fully. Its food in confinement consisted of rabbit-flesh, rats, hedgehogs.

The *Huhua* is not a common bird, but is met with in most parts of the Himalaya in the more temperate valleys. The natives assert that it carries off quite young pigs; but no instance of this has fallen under my own observation. The adult bird would, however, be quite capable of doing so.

In confinement the bird became quite tame, and would utter cries of pleasure at recognizing the hand that fed it. It was not confined to a cage, but allowed to roam about, and during cold weather kept in a glass house.

The bird under notice was, I think, a female; and during the period which might probably be its nesting-season, was in the habit of uttering a peculiar and incessant cry.

The bird died quite suddenly, though apparently in fine condition.

W. R. Fitzgerald,
Major, late Royal Artillery.

Framingham Hall, near Norwich.
November 13, 1877.

Simla, Sept. 29th, 1877.

Gentlemen,—I cannot presume to encumber your pages with a long dissertation on the genus *Batrachostomus*; and I can afford, I think, to overlook the personal attacks upon myself contained in the Marquis of Tweeddale's recent letter (Ibis, 1877, p. 388), in which he refers to certain species of this genus.

A monographic notice of the Indian, Burmese, and Malayan species of this genus will appear (as soon as space can be found for it) in a future number of 'Stray Feathers;' but in the mean time, I think, it is of some importance that ornithologists should not be misled by the Marquis of Tweeddale's, in *my* opinion, erroneous identifications, and I desire to place on record in your Journal, very briefly, my views in regard to two points raised in his Lordship's letter, viz.:—first, the distinctness of *Batrachostomus affinis* and *B. castaneus*; and, second, the distinctness of *B. punctatus* and *B. moniliger*.

First as to *B. affinis*, Blyth.

There exists in the Malay peninsula, besides the magnificent *B. auritus*, which cannot well be confounded with any other Asiatic form, two distinct rufous forms of *Batrachostomus*:—

The one, the larger, *B. javanensis* apud Blyth, with conspicuous white wing-spots, with the wing usually measuring from 4·75 to 5 inches, and with a bill from 1·3 to 1·4 wide at base, and from 1·37 to 1·49 straight from angle of gape to top of bill. I have *twenty* specimens of this form now before me. They vary a great deal in the tone of the upper and lower plumage—the upper surface from light dingy chestnut to a very deep rufous brown, and the lower surface correspondingly, though in a lesser degree; but all unmistakably belong to the same species.

The other, the smaller—*B. affinis* apud Blyth, with, in three specimens out of four, *no* white spots on the wings, with wings varying from 4·28 to 4·6*, and with bills varying in width at gape from 0·95 to 1·13, and in length from gape to tip from 1·05 to 1·33. I have *four* specimens of this form before me; one is *precisely* similar to the type. Three answer well to Blyth's description; but the fourth has some spots upon the wing, and *may*, perhaps, notwithstanding the extreme narrowness of its bill and short wings, belong to the other form, which it closely resembles, as it has the bill 1·33 in length, whereas in the other three specimens the bills are only 1·05, 1·1, and 1·2 in length.

Setting aside this possibly doubtful specimen, I have *three* specimens, at any rate, of typical *B. affinis*, all shot in the neighbourhood of Malacca—wings 4·28, 4·5, and 4·6, with tails 4·4 and 4·5—answering in every respect to Blyth's description, and which, in my opinion, no one who compares them with either type or description can possibly doubt to be the form described by Blyth as *B. affinis*.

I have also before me four chestnut *B. castaneus*; wings 5·2, 5·25, 5·25, 5·5. It seems to me that difference in size alone is sufficient to separate the two; *B. castaneus* is really more than double the bulk of *B. affinis*; but the whole character and colour of the plumage is also totally different. The plumage in *B. affinis* is of the same colour and character as that of *B. javanensis* apud Blyth; and both are clearly different, to any practised eye, from *B. castaneus*. The plumage of this

* Blyth gives the wing as 4·5.

latter is softer and silkier; and the chestnut is brighter everywhere (but most conspicuously so on the throat and breast) in the dullest *B. castaneus* than the brightest *B. javanensis* or *B. affinis*.

I say nothing now of the grey white-mottled birds from Malacca, and the similar, though immediately distinguishable, ones from the Himalayas. I assert nothing as to the validity of Blyth's *B. affinis*, nor as to the correct name that this or *B. javanensis* apud Blyth should bear.

I merely assert that in the Malayan peninsula occur two forms, a larger and a smaller (both fully represented in my museum), agreeing alike with the descriptions and the types of *B. javanensis* and *B. affinis*, Blyth, and both absolutely and unmistakably distinct, and distinguishable at a glance from *B. castaneus*.

Secondly, as to *B. punctatus* and *B. moniliger*. I have *B. moniliger* both from the Travancore hills and from Ceylon perfectly identical. In no adult *B. moniliger* does the wing fall short of 4·7. In *B. punctatus*, on the other hand, of which several specimens have now, Mr. White informs me, been obtained, the wing appears to be always under 5·5 (in the type it is only 5·3); and though unquestionably there is a strong family resemblance between the males of *B. moniliger*, as sexed by Mr. Bourdillion (for I have no really reliable sexed specimens except his), and *B. punctatus* as described (I have not yet seen the rufous form of this), the difference between the two birds in every dimension, and even in plumage, is such that no one who compares them can ever confound the two.

One more point remains to be noticed. When referring to Mr. Hodgson's bird, the type of *Otothrix hodgsoni*, I said it was certainly an adult female by dissection. I said this on the strength of Mr. Hodgson's entry on the back of the plate in his own hand:—

"Darjeeling, towards Great Runjeet, about 4000 or 3000 feet. May 20, 1856. *Female*, young, and nest. Plumes full" &c. &c.

Here follows a full description of structure; and he adds, "Young like mature, but duller hues; nest nearly flat, a soft mass of lichens, overlaid with a soft downy vegetable substance, blended into a sort of felt."

Now, when Mr. Hodgson enters the sex in his own hand, with a full structural description, he has invariably ascertained the sex by dissection.

But, as every one knows, a single dissection cannot always be relied on, injury by shot, disease, partial decomposition of the specimen will at times mislead the most careful observers, and they will put down, without any doubts in their own minds, a single specimen as male or female, and then find out later, when they come to deal with a series, that they have somehow made a mistake. Such cases, however, form the exception, and not the rule.

Therefore when I first wrote I thought it probable that Mr. Hodgson (although he had had only a single specimen before him) was correct in the sex which he had recorded, undoubtedly from dissection. But later, when I obtained Mr. Bourdillion's evidence, and other collateral evidence which I did not think it necessary to refer to, I began to entertain the probability that Mr. Hodgson had been in some way deceived. There is no uncertainty as to Mr. Hodgson's having been of opinion that he had made out the bird to be a female by dissection. The uncertainty is as to whether he was correct in that opinion, or whether, as will, at times, happen to the most accurate observers, he was misled by deceptive appearances due to any of the causes above referred to. Fortunately I shall be able to produce conclusive evidence on this moot point, and shall now only draw attention to Schlegel's remark (J. f. O. 1856, p. 460) :—"Bei allen indischen *Podargen* sind die Männchen grau, die Weibchen rostfarben."

Yours truly,

A. O. Hume.

P.S. (26th October).

I have only just discovered that I myself am, in a measure, to blame for the error into which Lord Tweeddale has (in my opinion) fallen, about *Batrachostomus castaneus, B. affinis,* and *B. javanensis* apud Blyth.

I find that, in writing up my notes for my former papers in regard to these species, I myself confused the dimensions I had recorded on separate scraps for the two Malayan forms, and gave for *B. affinis* what pertained to *B. javanensis,* and argued on the same accordingly.

For this I cry *peccavi;* but the main fact remains unchanged, viz. that, as I have throughout contended, *B. affinis* and *B. javanensis,* apud Blyth, are both quite distinct from *B. castaneus.*

Sirs,—In Part 2, vol. v. of 'Stray Feathers,' Mr. Hume has published some criticisms on certain species of the Phasianidæ, regarding which I desire to make a few remarks.

First (p. 118), referring to the supposed new species of *Polyplectron,* called *P. intermedius,* Mr. Hume, having found that it was the same as my *P. germani,* says that his description of the tail-feathers was so accurate that he is surprised I had not informed him that the two birds were the same in *my letter to 'The Ibis' of June* 1873. I could not give him the information he desired in the way indicated, for the simple reason that I never wrote any letter to 'The Ibis,' nor to any other journal, about his *Polyplectron;* and the footnote attached to *Mr. Blanford's* able review of 'Stray Feathers' in 'The Ibis' of *April* 1873 had reference solely to some so-called species of the late Mr. G. R. Gray!

Mr. Hume's next criticism (p. 138) is, that as I state the male of the bird I call *Euplocamus ignitus,* when immature, has the "flanks streaked with chestnut, and the central tail-feathers brown," he wants to be informed (after describing a well-known stage of plumage observed in the young male *E. ignitus*) where the bird with "pale chestnut flanks, varied with purplish black," mentioned by Sclater, is to come from, or what stage of *E. vieilloti* it represents. I regret very much to be obliged to say that I do not know. So far as I am concerned, and the opinion I gave, the case stands as follows:—What I meant by saying that the immature male of the bird I call *E. ignitus* had the flanks "streaked with chestnut," was, that in place of the pure white central line on the black flank-feathers seen in the adult, the immature bird had this part chestnut (and I believe I was perfectly correct in so stating, although in some adults a chestnut tinge on this part sometimes remains)—and also that the central rectrices were rufous, instead of snow-white, which they afterwards become. As to this bird mentioned by Mr. Sclater with its *entirely* chestnut flanks, varied with black, I know nothing. Mr. Sclater says he has seen specimens; consequently they do exist; but although I believed I had examined all the specimens of the Phasianidæ then existing in the museums of Leyden, London, Paris, &c., and also the living birds in the Gardens at Amsterdam, Antwerp, Rotterdam, London, and in the Jardin d'Acclimatation and Jardin des Plantes at Paris, I have no recollection of seeing such a bird. Certainly, if I had, and it was a good species, there was no reason why I should not have given a plate of it in my work. After all, may not this bird described by Latham be an immature *E. nobilis*? for he gives its habitat as Java, with a question, and it might very possibly have come from Borneo! I shall take the earliest opportunity of examining one of these chestnut-flanked birds, and state my opinion of it in this journal.

The third and last criticism of Mr. Hume is on the error I committed (in his opinion) in uniting the *Pucrasia castanea*, Gould, with *P. duvauceli*, Temm. Now, before replying to this, it will first be necessary for me to say a few words about the last-named species, which, from his remarks, I should judge to be entirely unknown to Mr. Hume. He says Prêtre's drawing in the 'Planches Coloriées' is a "vile thing, a wretched picture," and that, "barring the tail, it is equally unlike every species of the genus" (quite true), and condemns it *in toto*, so far as I can see, because it does not resemble *P. macrolopha*. Now I would state, in justice to Prêtre, that, although his drawing does not equal one of Mr. Wolf's, yet it is a very faithful representation of *P. duvauceli*, Temm. I have no hesitation in saying this; for I am perfectly conversant with his type (the original of the plate in the 'Planches Coloriées'), as the specimen is still, and always has been, I believe, here in the Paris Museum; and it was by means of this example and the *type* of *P. castanea* (which I purchased from Mr. Gould, and which is now in the Zoological Museum at Stuttgart) that I became aware the two were the same species, and consequently placed Mr. Gould's bird among the synonyms of *P. duvauceli.* From their appearance and general mode of coloration, we are fairly entitled to believe that *P. duvauceli* and *P. macrolopha* are as thoroughly distinct species as any that are to be found in the Phasianidæ. Besides the chestnut on the back and sides of the neck, the flank-feathers, perfectly exhibited in the plate in my work, differ entirely from any I have ever seen in any specimen of *P. macrolopha*; and I have examined a great many. Mr. Gould's plate does not show these correctly: the chestnut colouring is exaggerated in its extent; and the black feathers with their light edges are almost entirely suppressed, a few only showing just above the leg. Temminck's text, it is true, does not describe his plate accurately, but leans more to *P. macrolopha*; but as he says "La gravure ayant été faite depuis *longtemps, même avant la publication des deux ovrages anglais* où se trouvent de tres-bonnès figures de notre oiseau," it is most probable that when he wrote his description he took it from an example of *P. macrolopha,* instead of from the specimen figured—which was in the Paris Museum, and which he may not have seen for a long time, and was confounded in his mind with the newly figured *P. macrolopha.* However this may be, the *types* show that *P. castanea* and *P. duvauceli* are the same species, and quite different from *P. macrolopha*; and I do not believe Mr. Hume will ever succeed in proving them all to be one species.

D. G. ELLIOT.

Paris, Dec. 8, 1877.

Obituary of the late Mr. R. Swinhoe, F.R.S.

ROBERT SWINHOE, whose premature death on the 28th of October last we all have to deplore, was born in Calcutta on the 1st of September, 1836. He was brought to England at an early age, and educated at King's College, London, of which he was made an Honorary Fellow in 1863. On leaving King's College he matriculated at the University of London in 1853, and in the following year passed as a supernumerary Interpreter for the Consular Service in China. During his residence in China he acted as Vice-Consul and Consul at Amoy, Shanghai, Ningpo, and Chefoo, as well as in Formosa. His expeditions included:—a journey up the Yangtsze river as far as the interior of Szechuen; the circumnavigation of the island of Formosa; a visit to Hainan; and a journey to Pekin, whither he accompanied, as interpreter, the English forces under General Napier and Sir Hope Grant. His last station was Chefoo, whither he had gone, with the hope of regaining health, in 1873. His malady, however, increasing, Swinhoe quitted China in October 1873, and, retiring from the Consular Service on a pension, lived in London till his death.

During his stay in China, Swinhoe devoted the whole of his spare time to working at the natural history of the different places at which he resided, ornithology occupying a large share of his attention. On the eve of his first departure from England he made the acquaintance of our Member, Mr. H. Stevenson. It thus came to pass that some of Swinhoe's first collections were consigned to Mr. Stevenson, and that a portion of the birds passed into the Norwich Museum, where they now are. But during his whole period of work Swinhoe always reserved an extensive series of specimens for his private collection, and used them for reference in compiling the numerous papers that he was constantly writing on his favourite subject. When Swinhoe first began his study of Chinese ornithology our knowledge of the birds of that country may be said to have been almost nothing. No general account of the birds of China had ever been published; and all that was known of them was of the most fragmentary description. The pages of the 'Proceedings of the Zoological Society' and of this Journal testify to Swinhoe's unremitting energy at his favourite subject. Of all the papers he wrote on it, the "Revised List of Chinese Birds," published in the 'Proceedings' for 1871, gives the best summary of what he has done to advance our knowledge of the Chinese avifauna.

During the latter part of the time that Swinhoe was working at the birds of the Chinese littoral, the interior of the country was being most ably investigated by Père Armand David; so that China, instead of being the *terra incognita* as regards our knowledge of its birds that it was twenty years ago, may now rank amongst the fairly explored countries of the globe.

Swinhoe's communications to this Journal commenced in 1860, after which scarcely a number, and certainly no volume, appeared without a contribution to its pages from him. His last communication to us bears the date of the same month as that of his death; and the fine Formosan species there described and figured, from a specimen obtained by Prof. Steere, supplements his own important discoveries in the same island.

Swinhoe was elected an Honorary Member of the British Ornithologists' Union in 1862, and passed to the list of Ordinary Members at his own choice in 1876. He was a Member of several of the scientific societies of London, as well as a Fellow of the Asiatic Society of Bengal. He was elected a Fellow of the Royal Society in 1876. It is much to be hoped that Mr. Swinhoe's fine collection of Chinese birds may be kept together in its entirety, and find a home in some public institution or private museum where the specimens will remain accessible, as they always were in their late owner's possession, to his brother workers in science.

THE IBIS.

FOURTH SERIES.

No. VI. APRIL 1878.

X.—*A Synopsis of the Genus* Pomatorhinus. By Lieutenant Wardlaw Ramsay, F.Z.S., M.B.O.U., 67th Regiment.

(Plates III.–V.)

The range of the genus *Pomatorhinus,* so far as is known, is confined to India, Ceylon, Assam and Arakan, Burmah, China, Formosa, Hainan, Malacca, Java, and Borneo. Twenty-one species are known to science, of which sixteen inhabit the continent of Asia. Of the remaining five insular forms one is found in Java (*P. montanus,* Horsf., type of the genus), two in the island of Formosa (*P. erythrocnemis,* Gould, and *P. nigrostellatus,* Swinhoe), and one in Ceylon (*P. melanurus,* Blyth), all peculiar to the islands on which they are found, whilst a fifth species, which inhabits Borneo (*P. borneensis,* Cabanis), is also found in Malacca. No species of *Pomatorhinus* has been recorded from Sumatra; but it is probable that when the mountainous regions of this island have been scientifically explored, one, if not two or more, possibly undedescribed species may be revealed to us.

In the Austro-Papuan region is found a single species, which should more correctly be placed in the genus *Pomatostomus* (Cabanis, Mus. Hein. i. p. 83), viz. *P. isidori,* Less. Voy. Coq. Zool. p. 680, pl. 29.

The members of this genus are mostly birds which frequent mountainous countries at moderate elevations. Their food seems to consist entirely of insects, and is usually collected by turning over dead leaves on the ground. They are gregarious in their habits, generally being found in small parties, or in pairs, making their way through thick bush-jungle, or hopping about on the ground below. Sometimes a considerable number are found creeping about in the same bush, and all chattering loudly. Mr. R. Swinhoe says, in writing of *P. musicus* (Ibis, 1863, p. 284), "There is not much music in its ordinary call-note; but when two or three are met together, and vie with one another in their strains, the effect is pleasing, though not to be compared to that of the Hwa-mei (*Garrulax taivanus*). When at rest in the middle of the day, hidden in some sombre hill-side wood, they keep on uttering at intervals a series of very liquid notes in regular cadence. These have an indescribably hollow and unnatural sound, and at first puzzle the listener to know whether they are produced by beast, bird, or insect." MM. David and Oustalet say, 'Ois. de la Chine,' p. 184, "C'est un oiseau (*P. gravivox*) très-rusé et très-difficile à découvrir. Il prend toujours à la même heure son bain quotidien et fait entendre, à la tombée de la nuit, son chant sonore et peu varié, mais remarquable par son étrangeté," and, on the authority of the Chinese, "dans certains districts on garde cet oiseau dans les maisons, où il détruit les insectes parasites, et particulièrement les punaises;" this statement, however, has not been confirmed by Père David's observation.

All the members of this genus are subject to considerable variations, both in dimensions and in plumage; but there is no tangible difference in plumage between the sexes.

For notes on the nidification of some species of *Pomatorhinus,* I refer the reader to Jerdon, 'B. of India,' p. 32, Swinhoe, 'Ibis,' 1863, p. 284, and Hume, 'Nests and Eggs of Indian Birds,' pp. 250 and 251.

1. POMATORHINUS MONTANUS.

Pomatorhinus montanus, Horsfield, Linn. Trans. xiii. p. 165 (1820) (type of genus); Zool. Res. in Java, pl. 51 (1824).

Head dark slaty brown, lores black, ear-coverts dark brown, a white supercilium from the base of the maxilla to the nape; the whole of the upper surface of the body, and sides of the neck and breast, bright reddish chestnut; primaries brown, faintly margined on the outer web with olive; secondaries, tertiaries, and outer webs of tail-feathers chestnut-brown; throat and breast white; flanks reddish chestnut, passing into chestnut-brown on the belly and lower tail-coverts. Bill yellow, culmen dark.

Wing 3·8 inches, tarsus 1·3, bill from gape 1·15, tail 4·2. Specimen descr. ex Java (*Wallace*): mus. Tweeddale.

Hab. Java.

According to Horsfield (*l. c.*) this bird is confined to the higher ranges of the hills, never descending below about 7000 feet. He further states that it builds its nest on high trees and feeds on berries and fruits or vegetables!! From existing evidence, however, it would appear that *Pomatorhini* are purely insectivorous in their food.

In Borneo and Malacca this species is replaced by the following smaller and distinct race.

2. POMATORHINUS BORNEENSIS.

Pomatorhinus borneensis, Cabanis, Mus. Heineanum, i. p. 84 (1850).

Pomatorhinus montanus, Horsfield, S. Müller, Verh. over de Nat. Gesch. Nederl. overz. Bez., Land- en Volkenk. p. 405.

Pomatorhinus borneensis, Cab., Salvad. Ucc. di Born. p. 210.

Specimens from Borneo are identical with those from Malacca, and differ from the Javan *P. montanus* in being constantly much smaller, in the upper parts being rather brighter, and in the secondaries, tertiaries, and tail being olive-brown above instead of chestnut-brown.

Wing 3·5, tarsus 1·1, bill from gape 1·1, tail 3·6. Spec. descr. ex Borneo (*Wallace*) et Malacca (*Maingay*): mus. Tweeddale. Iris yellow (*Doria*).

Hab. Borneo, Malacca.

3. Pomatorhinus melanurus.

Pomatorhinus melanurus, Blyth, J. A. S. B. xvi. p. 451 (1847); Ibis, 1867, p. 301; Holdsworth, P.Z.S. 1872, p. 447.

Upper surface, sides of breast, flanks, abdomen, and lower tail-coverts rufescent olive-brown, the crown dark brown, tinged with olivaceous; lores black; ear-coverts dark brown. a white supercilium from the nares to the nape; throat, breast, and centre of belly pure white. Spec. descr. ex Ceylon (*Nevill*): mus. Tweeddale.

Bill pale yellow; irides red brown; feet lead-colour (*Holdsworth*).

Hab. Ceylon.

There is considerable variation both in plumage and size between specimens from different parts of Ceylon; indeed Holdsworth (*l. c.*) hints at the possibility of there being two species in the island; but this I am not disposed to admit.

The small race which is found at Newera Eliya has the back olive-brown, without being in the least rufescent, whilst the larger race, of which there are specimens in Lord Tweeddale's museum, obtained by Mr. Spencer Chapman at Avishavelle and Ruanwellé, near Colombo, has the above-mentioned part of a very bright rufescent olive-brown, and a few of the lateral breast- and flank-feathers partially white or centred white as in *P. schisticeps,* between which species and *P. montanus,* of Java, the present species is intermediate.

The dimensions of these two races, as they may be called, are as follows:—

Large. Wing 3·6 to 3·7 inches, bill from gape 1 to 1·5, tarsus 1·3, tail 4·2.

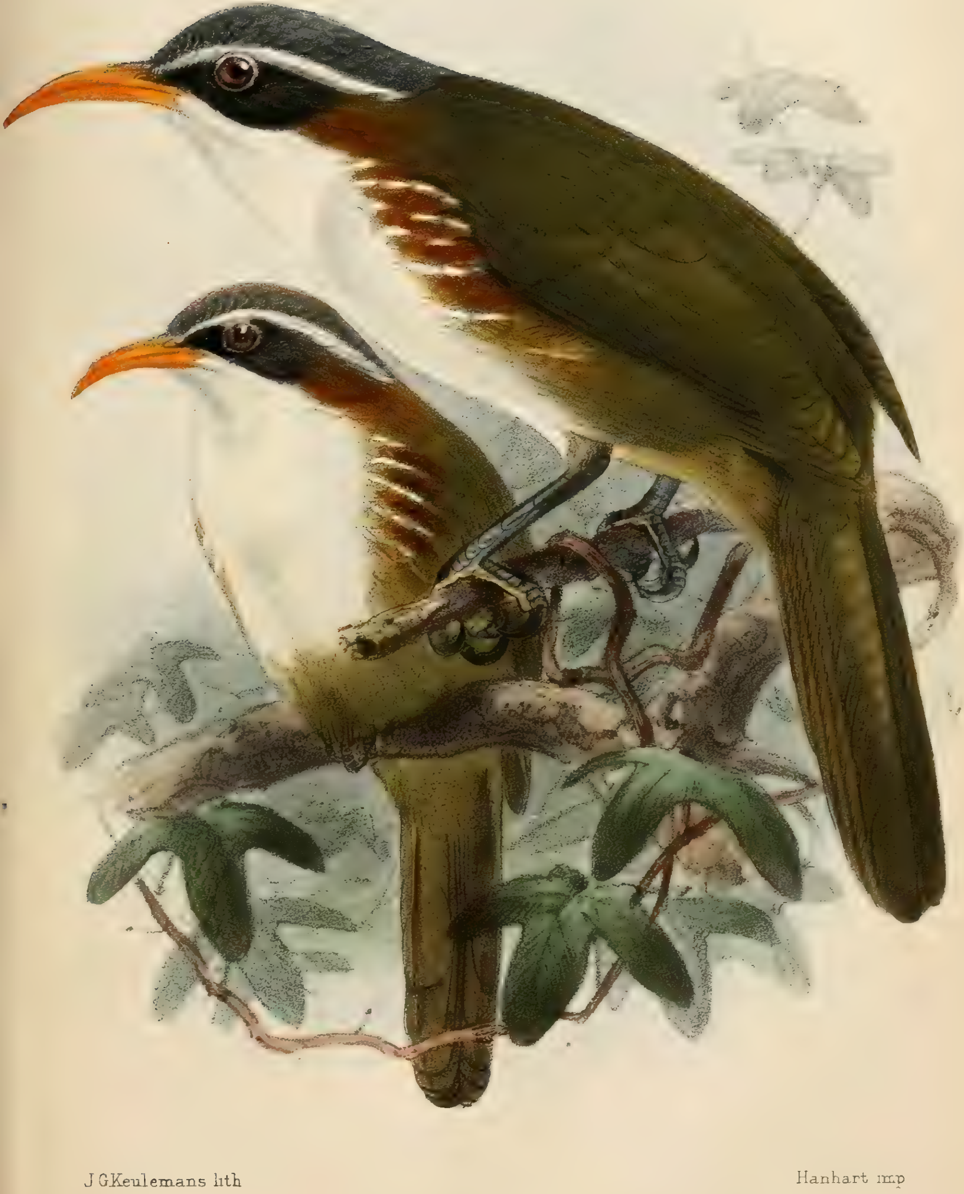
Small. Wing 3·2 to 3·5 inches, bill from gape 1 to 1·5, tarsus 1·25, tail 3·75.

4. Pomatorhinus schisticeps. (Plate III.)

Pomatorhinus schisticeps, Hodgson, As. Res. xix. p. 181 (1836); Jerdon, B. of Ind. ii. p. 29.

Pomatorhinus leucogaster, Gould, P. Z. S. 1837, p. 137.

Pomatorhinus montanus, Horsfield, M'Clelland, P. Z. S. 1839, p. 166.



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POMATORHINUS SCHISTICEPS.

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Above dull olive-green; head above from forehead to nape dark slate-colour; lores and ear-coverts black, a white supercilium from nostrils to nape; throat, breast, and belly pure white; flanks, sides of the breast, and a patch on each side of the neck behind the ear-coverts ferruginous chestnut, the lateral breast-feathers centred white; sides of the abdomen, thighs, and lower tail-coverts dusky olive-green. Spec. descr. ex Darjeeling: mus. Tweeddale.

Bill orange-yellow, culmen dark brown; irides hoary (*Jerd.*), purple (*Godwin-Austen*); legs plumbeous.

Wing 4·0 in., bill from gape 1·3, tarsus 1·3, tail 4·2 to 4·6.

In some specimens the head is dull olive-green, only tinged with cinereous.

Hab. N.W. Himalayas, Nepal, Sikkim, Bootan, Dacca (*Jerdon*), Assam (*Godwin-Austen*).

After a careful examination of a large series of *P. schisticeps* and the so-called *P. leucogaster*, from the Himalayas, Garo hills, Munipur, Dafla hills, Naga hills, and Saddya, it seems to me quite impossible to recognize two species. Blyth states (Cat. B. of Burma, 1875, p. 113) that *P. leucogaster* is smaller than *P. schisticeps*. I have examined three of Hodgson's Nepal type specimens of *P. schisticeps* in the British Museum; and these have the wing respectively 4·07, 3·9, and 3·6. Gould, in his description of *P. leucogaster*, gives the wing as 3·75, which is actually longer than in one of the specimens of typical *P. schisticeps*.

The race which inhabits Burmah and Karen-nee is more closely allied to *P. olivaceus*, Blyth, than to *P. schisticeps*, to which Mr. Hume (S. F. iii. p. 121) refers specimens from Thyetmyo. This race has been separated by Lord Tweeddale under the title of *Pomatorhinus nuchalis* (*vide infra*).

5. POMATORHINUS OLIVACEUS.

Pomatorhinus olivaceus, Blyth, J. A. S. B. xvi. p. 451 (1847); Hume, S. F. v. p. 137.

Differs from *P. schisticeps* in having the upper surface somewhat brighter, the nape faintly tinged with ferruginous, the bill yellow throughout, and by the ferruginous neck-spot not being extended down the sides of the breast and flanks, these parts in the present species being light earthy brown. Spec. ex Meetan (*Limborg*) : mus. Tweeddale.

Bill yellow; legs grey (*Limborg*).

Hab. Yé, Tenassserim Provinces (*Barbe*) ; Meetan, Tenasserim (*Limborg*).

6. POMATORHINUS NUCHALIS.

Pomatorhinus nuchalis, Tweeddale, Ann. & Mag. Nat. Hist. ser. 4, xx. p. 535.

Pomatorhinus leucogaster, Gould, apud Walden, J. A. S. B. 1875, p. 118.

Pomatorhinus schisticeps, Hodgs. apud Hume, S. F. v. p. 137.

Distinguished from *P. olivaceus* by the ferruginous neck-spot being extended down the flanks as in *P. schisticeps,* Hodgson; but the white streaks down the centre of the ferruginous lateral breast-feathers, which are so marked in the latter species, are here altogether wanting. It has also a ferruginous nuchal collar, which is very broad and distinct in specimens from Karen-nee. Spec. mus. nostr.

Iris straw-yellow; bill orange-yellow, black near the base of maxilla; legs slaty (*W. R.*).

Wing 3·6 inches, bill from gape 1·25, tail 4·0, tarsus 1·15.

Hab. Thyetmyo, Tonghoo, Karen hills, Karen-nee (*W. R.*)

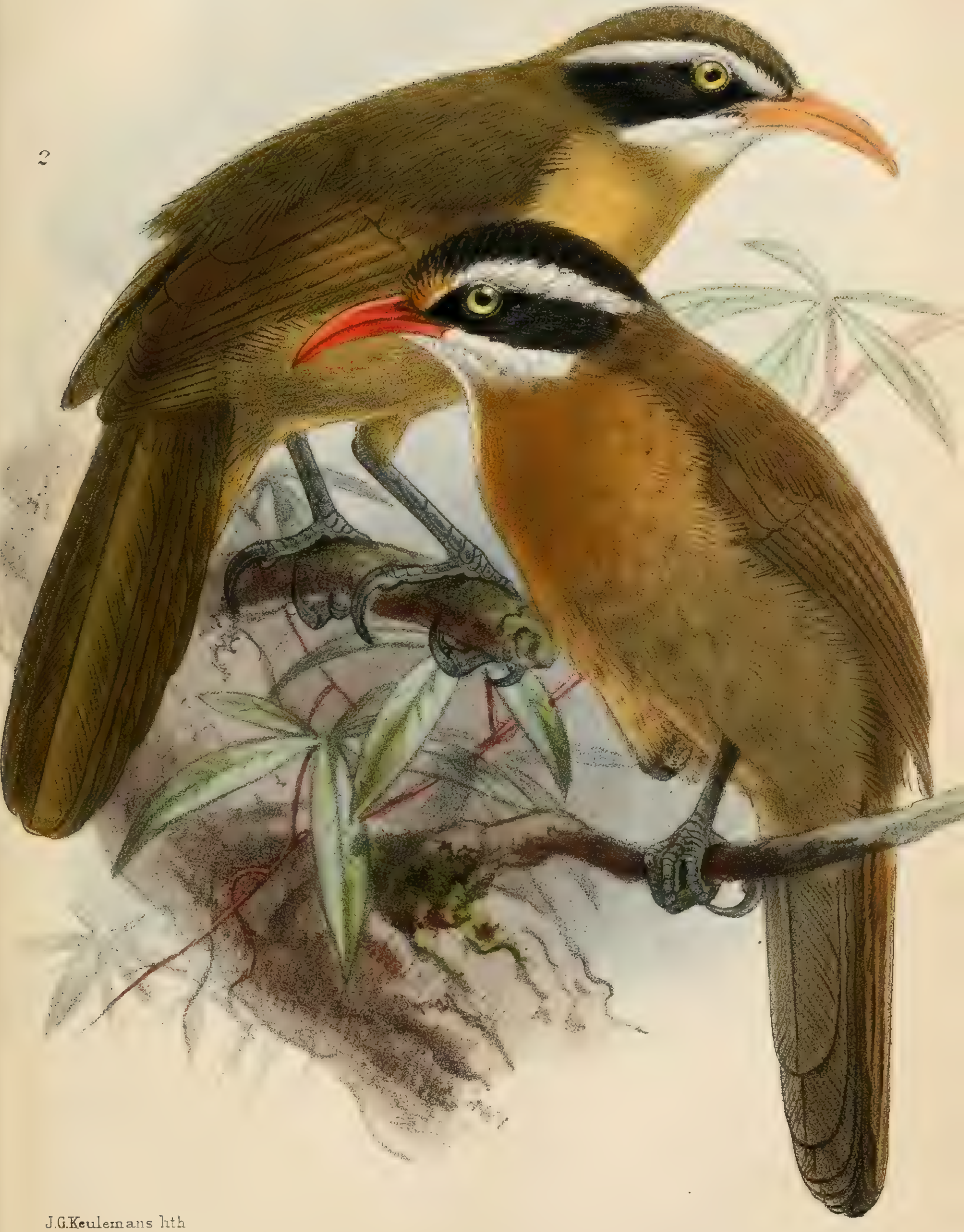
7. POMATORHINUS FERRUGINOSUS. (Plate IV. fig. 1.)

Pomatorhinus ferruginosus, Blyth, J. A. S. B. xiv. p. 597 (1845); Jerdon, B. of Ind. ii. p. 29.

Pomatorhinus rubiginosus, Blyth (laps. cal.), J. A. S. B. xxiv. p. 273.

Crown and nape black, a black patch extending from the lores below the eye to the nape, and separated from the black of the crown and nape by a broad white supercilium, which commences in a tuft of stiff ferruginous loral feathers; upper part of the throat and lower cheeks white, forming a broad white crescent. Body above and tail greenish olive-brown, brighter on the wings; lower throat, breast, and belly bright ferruginous, changing into olive-brown on the flanks and lower tail-coverts. Spec. descr. ex Darjeeling: mus. Tweeddale.

Bill coral-red; legs greenish brown; irides red-brown (*Jerdon*).



J.G.Keulemans lith

1 POMATORHINUS FERRUGINOSUS
2 POMATORHINUS PHAYREI.

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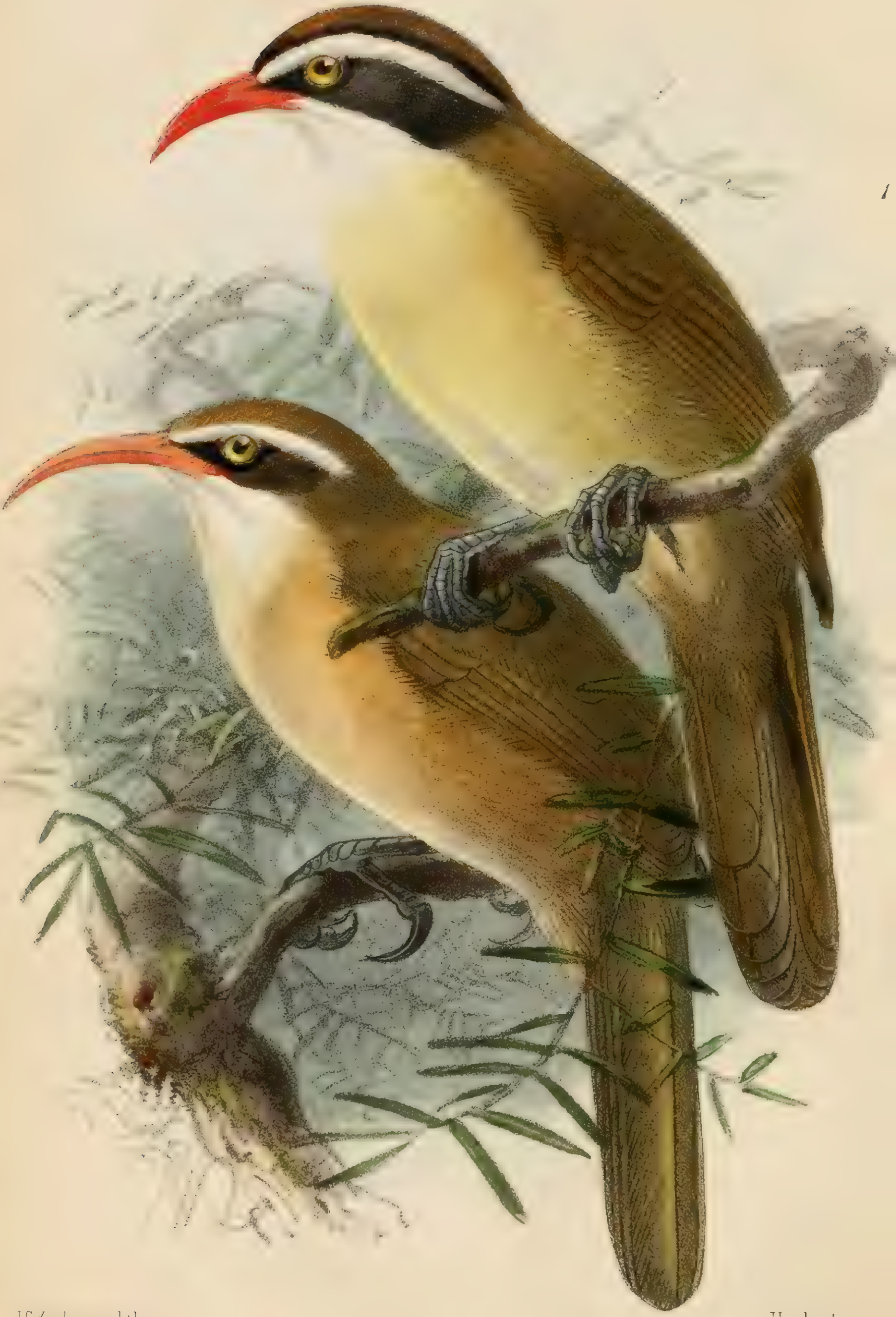

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Hanhart imp.

1. POMATORHINUS ALBIGULARIS
2. POMATORHINUS STENORHYNCHUS.

Bill crimson; legs dull green; irides pale greenish yellow (*Godwin-Austen*).

Wing 3·6 inches, bill from gape 1·2, tarsus 1·3, tail 4.

Hab. S.E. Himalayas, Darjeeling, Arakan (*Blyth*), Nepal, Sikkim (*Jerdon*), Dafla hills (*Godwin-Austen*).

8. POMATORHINUS PHAYRII. (Plate IV. fig. 2.)

Pomatorhinus phayrii, Blyth, J. A. S. B. xvi. p. 452 (1847); Jerdon, Ibis, 1872, p. 301.

Very closely allied to the last species, from which it differs in having the crown of the head of the same colour as the back, and in the ferruginous colour of the lower surface being less deep, the stiff loral feathers much reduced and pale yellow, and in the upper ridge of the supercilium having a black margin. Spec. descr. mus. Godw. Aust.

Wing 3·5 to 3·8 in., bill from gape 1·2, tarsus 1·4, tail 4·1.

Bill yellowish coral-red; irides pale yellow (*Godwin-Austen*).

Hab. Arakan, Khasias, Tavoy (*Blyth*), Nepal or Sikkim (*Hodgson*), Munipur, Naga hills, Cherra Poonjee (*Godwin-Austen*).

9. POMATORHINUS ALBIGULARIS. (Plate V. fig. 1.)

Pomatorhinus albogularis, Blyth, J. A. S. B. xxiv. p. 274 (1855).

Pomatorhinus mariæ, Walden, Ann. & Mag. Nat. Hist. ser. 4, xv. p. 403 (1875).

Differs from *P. phayrii* in the upper parts being of a much brighter brown, the entire throat and lower part of the cheeks white, the lower parts being merely washed with ferruginous, and the white superciliary streak being much broader, especially near the lores. Spec. descr. ex Karen hills: mus. W. R., type of *P. mariæ*.

Bill coral-red.

Wing 3·7 inches, bill from gape 1·1, tarsus 1·25, tail 4.

Hab. Mooleyit (*Tickell*), Karen hills (*W. R.*), Tenasserim (*Hume*).

10. POMATORHINUS STENORHYNCHUS. (Plate V. fig. 2.)

Pomatorhinus stenorhynchus, Godwin-Austen, J. A. S. B. xlvi. p. 43 (1877).

Differs from the last in being smaller and in having the back of a much greener cast and the head more ochraceous, and in wanting the black patch from the bill to the nape; the white supercilium not being margined above with black, and not extending beyond the ear-coverts; lores black, ear-coverts dark brown; the bill very long, tapering, and much curved. Spec. descr. ex Saddya: mus. Godw. Aust.

Legs and feet horny grey; bill bright orange-red (*G. A.*).

♂. Wing 4·0 in., tail 4·4, tarsus 1·35, bill at front 1·45.

♀. Wing 3·25 in., tail 3·9, tarsus 1·20, bill at front 1·15.

Hab. Assam, near Saddya (*Godwin-Austen*).

Colonel Godwin-Austen's type specimen (♂) has an abnormally long and slender bill, whilst two other (♀) specimens have the bill much the same as in the succeeding species.

11. POMATORHINUS OCHRACEICEPS.

Pomatorhinus ochraceiceps, Walden, Ann. & Mag. Nat. Hist. ser. 4, xii. 1873, p. 487; Wardlaw Ramsay, Ibis, 1877, p. 465, pl. xiii.

Allied to *P. albigularis* and *P. stenorhynchus*, differing from the latter in having the entire lower surface except the flanks, vent, and lower tail-coverts white, and in the head being of even a brighter ochraceous colour, the supercilium extending to the neck. The bill is not typical, but long, slender, and much curved as in the last species. Spec. descr. mus. W. R., type.

Iris pale straw-yellow; bill coral-red, tinged with orange; legs greenish (*W. R.*).

Hab. Karen hills (*W. R.*), Tenasserim (*Limborg*).

12. POMATORHINUS HORSFIELDI.

Pomatorhinus horsfieldii, Sykes, P. Z. S. 1832, p. 89; Jerdon, B. of Ind. ii. p. 31; Des Murs, Icon. Orn. pl. 22.

Upper surface of an olive-brown, brighter on the wings and tail, which is faintly barred, the feathers on the crown tipped with black. Lores black, from which springs a broad dark greenish black cheek-stripe or patch extending below the eye across the ear-coverts and sides of the neck to the sides of the breast and belly, which are pure black; a broad white supercilium extends from the base of the maxilla to the nape; the whole throat breast, and upper belly pure white; round the margin of the white some of the black feathers are longitudinally striated with white, and some of the white feathers are mottled with black; flanks, vent, and lower tail-coverts olive-brown. Spec. descr. ex Neilgherries: mus. *W. R.*

Bill yellow; basal half of maxilla dark brown; legs dusky green; irides red-brown.

Wing 3·8 to 4·0 in., bill from gape 1·1 to 1·3, tarsus 1·4, tail 4.

Col. Sykes remarks (J. A. S. B. iii. p. 537), "Minute insects (Dipterous) found in the stomach . . . . the tongue and habits of this bird are those of a Thrush or Timalia."

This species is very abundant on the Neilgherries, where, like all the members of its genus with which I am acquainted in the wild state, it is gregarious.

For remarks on its nidification, *vide* 'Ibis,' 1875, p. 320, and 'Stray Feathers,' iv. p. 399.

Hab. Southern India, Central India (*Jerdon*), Cuttack (*Blyth*).

13. POMATORHINUS OBSCURUS.

Pomatorhinus obscurus, Hume, Stray Feathers, i. p. 7 (1873).

"Very like *P. horsfieldi,* Sykes, but larger (?); bill longer; deeper, and more compressed, and general colour (where not white) dull smoky earthy brown" (*Hume*).

"Irides dark reddish brown; legs olivaceous slate; bill ivory-yellow, horny at base of upper mandible" (*Butler*).

Wing 3·8, bill at gape 1·4, tarsus 1·25, tail 4·0. Spec. descr. ex Khandala: (*Fairbank*) mus. Tweeddale.

Two specimens from Candeish, two from Khandala, and three from Mahabaleshwar are referable to this species, which seems to be quite unmistakable.

These are all smaller than the average of my series of true *P. horsfieldi* from the Neilgherries; and Captain Butler's wing-measurements (S. F. iii. p. 471) of four specimens from Mount Aboo do not bear out Mr. Hume's statement that *P. obscurus* is larger than *P. horsfieldi.* Captain Butler states (*l. c.*) that this species, unlike its congener *P. horsfieldi,* is not gregarious (?).

Hab. Seonee, Mount Aboo, Central Provinces (*Butler*); Candeish, Khandala, Mahabaleshwar (*Fairbank*).

14. POMATORHINUS RUFICOLLIS.

Pomatorhinus ruficollis, Hodgson, As. Res. xix. p. 182 (1836); Jerdon, B. of Ind. ii. p. 29.

Pomatorhinus stridulus, Swinhoe, Ibis, 1861, p. 265.

Head and whole upper surface olive-brown; nape and sides of the neck from directly behind the ear-coverts bright rusty; lores black; ear-coverts dark brown, streaked with white on the lower side, a white supercilium from the forehead to the nape; throat pure white, breast white, more or less spotted and striated with pale olive-brown or earthy brown, with which in some the flanks, abdomen, and lower tail-coverts are coloured. Spec. descr. ex Nepal: mus. Tweeddale.

Bill yellow, culmen dark; irides red brown; legs yellowish grey: spec. ex Nagas (*Godwin-Austen*).

Wing 3·2 inches, bill from gape 1, tarsus 1·2, tail 3·6.

Hab. Nepal, Himalayas, Assam (*Godwin-Austen*), S. China (*Swinhoe*), W. China (*David*).

Colonel Godwin-Austen draws attention (J. A. S. B. 1876, p. 75) to the fact that specimens from the Dafla hills agree with those from Darjeeling, but not with Naga-hill and Nepal birds. Specimens from the two first-mentioned localities are larger, and have much stronger legs and feet, and the olive-brown of the wings and back has a much redder tinge.

I agree with MM. David and Oustalet (Ois. de la Chine, p. 186) in reducing the title of *P. stridulus,* Swinhoe, to the rank of a synonym of this species. It is absolutely impossible in any way to separate the birds collected by Père David in Setchuen from Nepalese specimens. Two specimens, otherwise agreeing with the above, from Eastern China exhibit a rufous pectoral band formed by the nuchal collar being continued across the breast; but in one of Hodgson's Nepal specimens in the British-Museum collection the same thing occurs. This species, according to David and Oustalet (*l. c.*), is subject to considerable variations in plumage, even among specimens from the same locality, like most of the members of the genus.

15. POMATORHINUS MUSICUS.

Pomatorhinus musicus, Swinhoe, J. A. S. Shanghai, ii. p. 228 (1857); Ibis, 1863, p. 284, pl. vi.; Dav. et Oust. Ois. de la Chine, p. 185.

Allied to *P. ruficollis,* Hodgson, but larger. It has the crown deep olive-grey, and the nuchal collar much brighter and broader, covering part of the back; the flanks and sides of the belly of a bright ferruginous, fading into olive-brown towards the vent; the whole throat and breast pure white, the latter spotted with large oval black drops; the white extending down the centre of the belly in some specimens. Spec. descr. mus. Tweeddale.

The young bird is rather browner, but otherwise similar to the adult (*Swinhoe*).

Iris straw-colour; legs dusky leaden grey; upper mandible brownish black, under and apical edge of half upper fleshy white, with wash of lemon (*Swinhoe*).

Length 8·2 to 8·5 inches (*Swinhoe*), wing 3·2 to 3·4, tarsus 1·25, bill from gape 1·05, tail 3·7.

Hab. Formosa (*Swinhoe*).

16. POMATORHINUS NIGROSTELLATUS.

Pomatorhinus nigrostellatus, Swinhoe, Ibis, 1870, p. 250.

This species is very closely allied to *P. musicus* of the island of Formosa; but, besides being a smaller bird (which character, as I have before pointed out, is of little value in this genus), the head is of the same bright olive-brown as the remainder of the upper parts, and the breast is much more thickly spotted and with much narrower black drops, which commence higher up on the throat and descend much lower on the breast. The ferruginous feathers of the flanks and belly have a narrow white margin, producing on these parts an appearance of striation; the nuchal collar, which is much darker, only extends across the back of the neck, not joining into the ferruginous of the flanks. Spec. descr. mus. Tweeddale.

"Bill pale yellow, brownish black on the basal half of the culmen; legs and feet leaden grey; irides yellowish.

"♂ and ♀. Length about 7·37, wing 3, tail 3·4, of ten feathers" (*Swinhoe*).

Hab. Hainan (*Swinhoe*).

Mr. Swinhoe remarks (*l.* c.) that the female is not so rufescent as the male, and wants the red on the hind neck.

17. POMATORHINUS HYPOLEUCUS.

Orthorhinus hypoleucus, Blyth, J. A. S. B. xiii. p. 371 (1844).

Pomatorhinus hypoleucus, Blyth, J. A. S. B. xiv. p. 597 (1845).

Pomatorhinus albicollis (Horsf. MS.), G. R. Gray, Gen. of B. i. pl. 57 (1846).

Pomatorhinus hypoleucus, Blyth, Jerdon, Ibis, 1872, p. 301.

Pomatorhinus inglisi, Hume, S. F. v. p. 32 (1877).

"Colour above olive-brown, a little cinerascent on the head; and a rufous streak commences behind the eye, and expands into a patch on the sides of the neck beyond the ear-coverts; lower parts white, margined with ashy on the sides of the breast; and the flanks wholly ashy with a tinge of brown; wings and tail a little rufescent, the lower tail-coverts a little more deeply so.

"Length 10 to 11 inches, wing 4·25, tail 4, bill to gape 1·75, tarsus 1·50" (*Blyth*) (descr. orig.).

Hab. Tipperah, Arracan, Khasias (*Blyth*); Assam (*Godwin-Austen*); Sikkim or Nepal (*Hodgson,* fide *Jerdon*).

For want of good adult specimens from Arakan and Tipperah, I am unable to write with much certainty about this species. I have before me ten specimens in all from Hill Tipperah, Garo hills, Naga hills, Cachar, Dafla hills, Saddya, and Arakan (Blyth's type specimen, J. A. S. B. xiii. 371). I provisionally retain the birds from all these localities under the title *P. hypoleucus,* Blyth. Mr. A. O. Hume (S. F. v. p. 32) has separated the Cachar bird under the title of *P. inglisi*; and with reference to Mr. Hume's remarks (*l. c.*) I may mention that the description of *P. hypoleucus* (Ibis, 1872, p. 301) he alludes to was not written by Jerdon, but by Lord Tweeddale, and was taken from a Garo-hill specimen—the only specimen which he happened to have in his house at the time he was completing Jerdon's manuscript*, and which I have before me now. In Colonel Godwin-Austen's collection, which he has kindly placed at my disposal, is a specimen from Dinapur, in the Cachar hills, which agrees closely with other Assamese specimens: it has a faint trace only of the rufous patches on the sides of the neck; but this character I find cannot be depended upon; for of two specimens from the Naga hills in the same collection, one has the rufous neck-patch highly developed, and the other has it only faintly indicated. Further, of two specimens from the Garo hills one has the rufous patches wholly wanting (this was the specimen Lord Tweeddale described *l. c.*), and another has them just perceptible, but not so distinct as in the Cachar bird. There is, I think, no tangible difference between the Cachar bird and other Assamese specimens; but not having good adult Arakan or Tipperah specimens* wherewith to compare them, I am unable to say whether they also agree.

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* See Ibis, 1872, p. 297, footnote. Colonel Godwin-Austen was in

Colonel Godwin-Austen writes to me, "The point of difference between the Assam variety and the true *hypoleucus* from Arakan is to be found in the coloration of the sides of the breast and flanks: the Arakan type specimen and another identical with it from Hill Tipperah have these very finely streaked with ash-grey and centred white; but in all the Assam birds the grey is more pronounced, and the white streaks are wider and larger. If this race is to be separated it will stand as *P. albicollis*, Horsfield, figured in Gray's 'Gen. of Birds' from a specimen obtained by Griffiths in Assam, and not Affghanistan, as given in the 'Cat. B. of Ind. Museum.'"

Now Col. Godwin-Austen's Hill-Tipperah specimen is a young bird, judging from its plumage, and is in the plumage in which Blyth's specimen (which I have before me) was at the time he described it (1844), and which has faded into a rusty brown colour on the upper surface, and a rusty white colour on the lower. I would therefore hazard the opinion

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error when he supposed that Jerdon took the description in question (P. A. S. B. 1877, p. 147) from his Cachar bird. In point of fact, Jerdon never described the bird anywhere.

* Blyth's type (which is before me) is immature; but even were it adult, it is so faded as to be wholly unfit for the purpose of comparison.

that adult birds from Tipperah and Arakan will be found to be identical with those from Assam, especially as Blyth's corrected description of his *Orthorhinus hypoleucus* (J. A. S. B. xiv. p. 597) agrees with adult specimens from Assam. Unfortunately the specimen from which he took this description was not brought home by Colonel Godwin-Austen, and is, I presume, still in the Calcutta Museum.

Another variety (*P. tickelli,* Blyth, apud Tickell, Ibis, 1863, p. 113), occurs in Tenasserim, having been obtained on the mountains of that province by Colonel Tickell in 1855. Mr. Blyth, however (J. A. S. B. 1855, p. 273), treated this specimen as merely a variety of *P. hypoleucus,* and thought it probable that it might be only a particularly fine adult of that species. As this specimen (which I have now before me) is, like so many of the specimens from the Calcutta Museum, so much faded as to be almost useless for describing, I give Blyth's own words (*l. c.*) :—" Specimen remarkable for having narrow white mesial streaks to the feathers of the nape, chiefly towards the sides of the nape, which we can perceive no trace of in Arakan specimens ; and similar well-defined but wider streaks on the dark ash-coloured sides of the breast, which are little more than indicated in the Arakan specimens under examination." Mr. A. O. Hume has lately (S. F. v. p. 32) proposed the name " *tickelli* " for this supposed species. It was known to Col. Tickell (Ibis, 1863, p. 113) as *P. tickellii,* Blyth, but no reference is given.

18. POMATORHINUS ERYTHROGENYS.

Pomatorhinus erythrogenys, Vigors, P. Z. S. 1830–31, p. 173; Gould, Cent. of B. pl. 55.

Pomatorhinus ferrugilatus, Hodgs. As. Res. xix. p. 180 (1826).

Pomatorhinus erythrogenys, Gould, Jerdon, B. of I. ii. p. 31.

Above cinereous olive-brown; forehead, a line under the eye, ear-coverts, sides of the neck and breast, flanks, lower tail-coverts, and thighs bright rusty brown, inclining to chestnut on the lower tail-coverts and thighs; throat and breast white, the former cinereous in some specimens and in others dark smoky grey; these latter I take to be be very old birds: spec. descr. mus. Tweeddale, Himalayas. In some examples the rusty sides of the breast almost meet, and in one (from Darjeeling) form a pectoral band a quarter of an inch broad; and, further, some specimens have a brown streak along the rami of the mandible; but in others this is absent.

Iris pale yellowish white; bill horny green, darker along ridge of upper mandible; legs and claws fleshy (*Beavan*).

Wing 3·9 inches, bill from gape 1·4 to 1·6, tarsus 1·4 to 1·5, tail 4·5.

Hab. Himalayas (*Jerdon*), Tenasserim (*Hume*).

This species belongs, as the last, to a group which ought perhaps to be generically separated, as has been suggested by other authors. All the species of it (six in number, viz. *P. hypoleucus*, Bl., *P. erythrogenys*, Vig., *P. m'clellandi*, Jerd., *P. erythrocnemis*, Gould, and *P. swinhoei*, Dav. et Oust.), have the bill dark-coloured, rather more curved than in typical *Pomatorhinus*, and very large.

19. POMATORHINUS M'CLELLANDI.

Pomatorhinus m'clellandi, Jerdon, B. of India, ii. p. 32 (1863); Godw.-Aust. J. A. S. B. xxxix. p. 104; Ibis, 1872, p. 302.

Pomatorhinus gravivox, David, Ann. Sc. Nat. (5) xviii. p. 2 (1873); D. & O. Ois. de la Chine, p. 183, pl. 49.

Allied to *P. erythrogenys*, Vigors; but differing in its much smaller size, and the forehead, ear-coverts, and under tail-coverts only being rusty brown, the flanks olive-brown, throat, middle of the belly, and breast being white, the latter with a distinct large triangular brown spot on each feather, and a brown moustachial streak along the rami of the mandible. Spec. descr. ex Assam: mus. Godwin-Austen.

In some specimens a few of the white feathers of the breast are very faintly tinged with rusty, forming a rudimentary band, which is very highly developed in one specimen only of *P. erythrogenys* above referred to.

Irides ochre; legs and feet fleshy grey (*Godwin-Austen*).

Wing 3·3 inches, bill from gape 1·2, tarsus 1·35, tail 3·8 (Khasia).

Naga-hill birds in Colonel Godwin-Austen's collection exceed all these measurements, having the wing 3·5 inches and the bill from gape 1·5.

Hab. Khasias (*Jerdon*); Naga hills, Saddya, Munipoor (*Godwin-Austen*); Setchuen, Chensi (*David*).

Pomatorhinus gravivox, David (*l. c*), is clearly this species, judging by the description and plate in the 'Ois. de la Chine,' where it is stated to inhabit "the mountains in Central Chensi and Northern Setchuen, as well as the chain between the provinces of Houpé and Honan."

20. POMATORHINUS ERYTHROCNEMIS.

Pomatorhinus erythrocnemis, Gould, P. Z. S. 1862, p. 281; B. of Asia, pt. xvi. pl. iv.; Swinhoe, Ibis, 1863, p. 286.

Forehead at base of maxilla, a small patch below the ear-coverts, a few feathers on either side of the breast, knees, and lower tail-coverts rusty red; head and neck cinereous brown, each feather margined with olive-brown; lower neck, back, wing-coverts, outer webs of the wing-feathers bright reddish chestnut; tail reddish olive-brown; beneath white, a broad moustache along the rami of the mandible dark brown, the feathers of the breast conspicuously marked with large acutely angular spots of the same colour; flanks and thighs olive-brown. Spec. descr. mus. Tweeddale.

"Legs leaden-grey, claws brownish; irides light reddish brown; bill much curved, blackish grey, with pale edges.

"In the young bird the bill is much shorter and less curved, the head is browner, and the back and upper parts more rufous, but the underparts are dingier and the colours generally not so bright as in the adult" (*Swinhoe, l. c.*).

Wing 3·8 inches, bill from gape 1·6, tarsus 1·5, tail 4.

Hab. Formosa, where it replaces in the central mountains *P. musicus* of the low country, rarely descending below 2000 feet (*Swinhoe*).

21. POMATORHINUS SWINHOEI.

Pomatorhinus swinhoei, A. Dav. Ann. Sc. Nat. ser. 5. vol. xix. art. 9, p. 5 (1874); Oiseaux de la Chine, p. 184, pl. 48.

Of this species, which was described three years ago by Père

David from S.E. China, where it inhabits "the wooded mountains which separate the provinces of Kiangsi and Fokien," I have not seen specimens; but judging by the description and plate in the 'Ois. de la Chine,' is doubtfully distinct from *P. erythrocnemis*, Gould, of Formosa, from which it appears to differ chiefly in the iris being pale yellow (*D. & O.*), the lower breast and abdomen of an ashy grey, and the head browner, more uniform with the colour of the back, which is of a much brighter chestnut and by the black stripe on the rami of the mandible being hardly traceable. These characters are nearly identical with those by which Swinhoe (*l. c.*) differentiates the young of *P. erythrocnemis*, Gould.

Iris pale yellow; bill blackish brown with the base greyish; tarsi and toes brown; claws grey, with brown tips (*David & Oustalet*).

XI.—*Notes on a 'Catalogue of the* Accipitres *in the British Museum,' by* R. Bowdler Sharpe (1874). By J. H. Gurney.

[Continued from p. 102.]

I THINK it desirable to mention a Malabar specimen of *Spilornis* which has been acquired by the Norwich Museum subsequently to the publication of my last paper, though unfortunately I am not able to give its exact locality, neither do I know the sex of the specimen. It is an adult bird in fresh plumage, very little abraded, and most nearly resembles, as it seems to me, the Bengal specimen presented by Captain Pinwill to the British Museum (*vide anteà*, p. 95), though not quite so rufous on the underparts. The crop is much vermiculated; and the chin is black with a slight slaty tinge, and also with a tinge of brown next the throat. From the district where this specimen was obtained, it is interesting to observe that it is quite distinct from *S. spilogaster* of Ceylon, both in the coloration of its underparts, and also in its measurements, which are the following—wing 18·5 inches, tarsus 3·7, middle toe *s. u.* 2.

The genus *Herpetotheres* is the next to which I have to allude; but I need merely do so, as I have nothing to add to Mr. Sharpe's account of the only species comprised in it, *H. cachinnans*, which, as it seems to me, is the sole representative of the Circaëtine group on the continent of America. I therefore pass on to the genus *Circaëtus*, all the species of which are African, and all, as far as is known, except *C. gallicus*, exclusively so.

The geographical range of *C. gallicus** is considerably wider than that of any other species of the genus. A summary of the countries which it inhabits is given in Mr. Sharpe's volume; and fuller details on this head will be found in Mr. Dresser's article on this species in his work on the Birds of Europe, including some particulars of its range "through Central Asia into Northern China," which is not alluded to by Mr. Sharpe, and which has been subsequently also recorded in Prejevalsky's 'Birds of Mongolia' (*vide* 'Ornithological Miscellany,' vol. ii. p. 145), and in David and Oustalet's 'Oiseaux de la Chine,' p. 21.

Proceeding to the consideration of the remaining species of the genus, I may observe that Mr. Sharpe gives the habitat of *C. beaudouini* as "Senegambia and North-Eastern Africa;" but the latter phrase must not be taken in its fullest sense: one of the specimens in the Norwich Museum, obtained from the late MM. Verreaux, was said by those gentlemen to have been obtained in Nubia (as recorded in 'The Ibis' for 1862, p. 213, footnote); but, with this exception, the only North-east African localities for this species with which I am acquainted are those recorded by Von Heuglin, viz. Southern and Eastern Kordofan and Eastern Sennaar†.

In the case of *C. cinerascens*, Mr. Sharpe has omitted to give his usual summary of the localities where this species occurs; and I may therefore mention that it has been met with both in Western and in Eastern Africa. As regards the West, the British and Norwich Museums possess several specimens from Bissao; and the former collection also contains an adult female obtained in January on the Rio Dande in Angola, which appears to be the only example hitherto obtained in the Portuguese possessions in Western Africa*. In Eastern Africa, south of the equator, this species occurs on the Zambesi, specimens from there being preserved in both the above-named collections; and the British Museum also possesses an adult example from the river Shiré. Its occurrence in Central and Eastern Africa, north of the equator, is thus recorded by Von Heuglin:—"A young female was shot at Bongo, in Central Africa .... Prince Paul of Würtemberg killed an old male in 1840 on the Blue Nile, rather below the 12th degree, between Rozeres and Fazogl; I received this species from the Quola of West Abyssinia, from the Fudj Mountains, from Bahr el Djebel, and from Bahr Ghazal; .... I am unable to say whether it is resident; but I met with it throughout the year, except from June to August"†

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* I consider *C. orientalis* of Brehm synonymous with *C. gallicus*, on which point see Mr. Dresser's note in 'The Ibis' for 1875, p. 102.

† *Vide* Ibis, 1860, p. 413, and 'Ornithologie Nordost-Afrika's,' vol. i. p. 86.

Mr. Sharpe correctly describes the usual phases of plumage incident to this species; but the Norwich Museum possesses a specimen obtained on the Zambesi by the late Dr. Dickinson, which is evidently in immature dress, with the exception of a few recently acquired adult feathers in the wings and tail, but which differs from the ordinary immature plumage in having the whole of the head, neck, and lower parts of a dark brown, corresponding with the darker portions of the mantle, and only varied by paler tips to the feathers of the side-neck and throat, and by decidedly white tips to those of the tibiæ and under tail-coverts, also by the mingling of a considerable portion of white with the brown of the wing-linings‡. It should likewise be noted that in this specimen the dark feathers of the underparts have no white bases.

The only figure of this species in fully adult plumage which adequately represents the grey tint peculiar to the old bird is that given by Müller*; and this, unfortunately somewhat exaggerates it. On the other hand, Von Heuglin's figure in 'The Ibis' for 1860, pl. xv., does not sufficiently show it, and his more recent plate in the 'Ornithologie Nordost Afrika's' exhibits no trace of it.

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* *Conf.* Du Bocage's 'Ornithologie d'Angola,' p. 39.

† *Vide* Ornithologie Nordost-Afrika's, vol. i. pp. 87, 88.

‡ The wing-linings are entirely white in the fully adult bird.

It may be useful to record the principal measurements of five specimens of this species preserved in the Norwich Museum, as compared with those of a male and female given by Mr. Sharpe.

	Wing. in.	Tail. in.	Tarsus. in.	Middle toe *s. u.* in.
♂ (Sharpe)	15·0	9·5	3·0	
♀ ,, ...	16·1	9·8	3·4	
In the Norwich Museum.				
♂, Bissao	15·4	7·7	2·9	1·9
Sex unknown, Bissao	15·1	8·2	2·9	1·8
,, ,, ...	15·3	8·5	3·0	1·8
,, ,, ...	15·4	9·1	3·3	2·1
,, Zambesi	15·5	9·0	3·0	1·8

The nearest in size of any species of *Circaëtus* to *C. cinerascens* is *C. fasciolatus,* which has hitherto been obtained only in the colony of Natal—a habitat singularly restricted, especially when compared with the wide geographical ranges of the other species of this genus.

Of this scarce species I know but five examples—the type in the British Museum, two in the Museum at Norwich, and two, from the Upper Umlas, in the collection of Captain Shelley, to whose kindness I am indebted for the loan of of his interesting specimens.

The following are the chief measurements of these five specimens, those of the type being copied from Mr. Sharpe's work :—

	Wing. in.	Tail. in.	Tarsus. in.	Middle toe *s. u.* in.
Type, in the British Museum, sex unknown	14·6	10·5	3·4	

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* *Vide* Description de Nouveaux Oiseaux d'Afrique, pl. 6.

	Wing. in.	Tail. in.	Tarsus. in.	Middle toe *s. u.* in.
In the Norwich Museum.				
Sex recorded as ♂..........	15·2	9·7	2·9	1·8
" " ♀..........	15·4	10·3	2·9	2·0
In the collection of Captain Shelley.				
Sex unknown..............	15·2	10·0	3·0	1·9
" "	15·5	9·5	3·0	1·9

On comparing these measurements with those of *C. cinerascens,* it will be seen that the two species are nearly identical in size, but that the average length of the tail is slightly greater in *C. fasciolatus.*

In their markings, however, the two species are very distinct; thus, in *C. fasciolatus,* the white transverse bars on the lower breast, abdomen, and thighs are much broader than in *C. cinerascens,* the white edgings to the upper tail-coverts much more conspicuous, and the arrangement of the transverse bars on the upper surface of the tail entirely different, the conspicuously wide white or whitish space stretching across the middle of the tail in *C. cinerascens* being absent in *C. fasciolatus,* in which species the tail is crossed by from four to five dark bars, with intermediate paler spaces, all of which are much more nearly equidistant from each other than is the case with the bars across the tail in *C. cinerascens.* This distinction may be readily perceived by comparing the figures of the two species, which will be found in 'The Ibis' for 1860, pl. xv., and in that for 1862, pl. iii.

In 'The Ibis' for 1861, at p. 130, I mentioned that in *Circaëtus fasciolatus* "the anterior part of the inside of the wing adjacent to the carpal joint is transversely marked with brownish grey bars," alternating with white ones, instead of being white as is the case in the adult of *C. cinerascens.* This description applies to the two specimens in the Norwich Museum, and also to the two in the possession of Captain Shelley; but in Mr. Sharpe's description of the type specimen in the British Museum it is said that the under wing-coverts are white, with "a few markings of pale brown," from which it would seem that in very old birds they may not impossibly become wholly white, as in *C. cinerascens*; so that this distinction is probably not one to be implicitly relied on.

Under the head *Circaëtus cinereus* Mr. Sharpe unites the greyish brown bird* described by Vieillot under that name, the dark chocolate-brown one to which Rüppell gave the specific name of *funereus*, and the white-bellied form which was called *pectoralis* by Smith, and subsequently *thoracicus* by Lesson.

Assuming this view to be correct, and postponing for the moment the question as to whether it is so or not, I would here remark that I think Mr. Sharpe is hardly accurate in giving as the habitat of the species "the whole of Africa, excepting the forest-region on the west coast," as I am not aware of an instance of this bird, in any of the phases which he includes under the head of *C. cinereus*, having been obtained to the north of the tropic of Cancer.

On the subject of the differences of plumage above alluded to, Mr. Sharpe makes the following remarks at p. 45 of his edition of Layard's 'Birds of South Africa:'—"It should be noted that the adult form of this Harrier-Eagle, with the black breast-band and white under surface, has not yet been met with north of the equator, and it is considered by some ornithologists that two species are confounded under the name of *C. cinereus*."

It seems, however, from the testimony of Schlegel and Von Heuglin, and also of Rüppell, that the white-bellied bird does in reality occur to the north of the equator. Professor Schlegel, who maintains that *C. pectoralis* is specifically distinct from *C. cinereus*, and that the latter is identical with *C. funereus*, mentions a specimen of *C. pectoralis* in the Leyden Museum, under its synonym of *thoracicus*, in the following terms—"Adulte, Sénégal, obtenu de Mr. Frank, 1859" (*vide* 'Muséum d'histoire Naturelle des Pays-Bas,'

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* I know not whether Vieillot's type specimen is still in existence; but, from a comparison of the two descriptions and figures, it would seem to have been a decidedly greyer bird than the type of Rüppell's *C. funereus*.

Buteones, p. 24*); and in his supplement to this work (*vide* Accipitres, p. 113), where he very unadvisedly, as I venture to think, unites as one species *C. gallicus, C. beaudouini,* and *C. pectoralis,* he again mentions the same specimen, referring to it in the following words:—"Adulte, Sénégal, 1858, dessous en arrière du jabot d'un blanc uniforme, les autres parties plus foncées que d'ordinaire." The latter comparison, no doubt, refers to the colour of the brown portions of the plumage being darker in this specimen than in *C. gallicus*; and the whole description entirely accords with the appearance of the adult *C. pectoralis.*

Von Heuglin, who agrees with Schlegel in considering *C. pectoralis* specifically distinct from *C. cinereus,* and the latter identical with *C. funereus,* describes the former, under the specific name of *thoracicus,* at p. 84 of vol. i. of his 'Ornithologie Nordost-Afrika's,' in exact accordance with adult South-African specimens, and adds some remarks respecting the localities where he met with it, of which the following is a translation:—"The Pectoral Serpent-Eagle is not very frequent in the warmer parts of North-eastern and Central Africa; its most northern limit is, I believe, the Province of Dongola (Argo Island, August 1852); we obtained it in Abyssinia, on the Blue and the White Nile, and in Kordofan, but only from after the rainfall until the early spring."

Under the head of *C. cinereus,* Von Heuglin remarks, at p. 85 of the volume already quoted, "Verreaux explains the whole-coloured Serpent-Eagle as the young of *C. thoracicus*†, with which view neither Schlegel, Von Pelzeln, nor I agree; the former is always larger, and has strikingly larger and stronger talons. We have examined many eastern and southern specimens, and the above comparison always holds good;

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* In the succeeding page Prof. Schlegel makes the following remark, under the head of *C. cinereus*:—"Taille plus forte et pieds beaucoup plus vigoureux que dans les autres espèces connues . . . . c'est décidément une espèce particulière, dont j'ai encore examiné des individus aux musées de Berlin et de Francfort."

† *Conf.* Ibis, 1862, p. 209.

nor do we see any intermediate stage between *C. cinereus* and *C. thoracicus*. The markings of the tail, however, do vary somewhat: the bars are sometimes narrower, sometimes broader, here and there more sharply defined, elsewhere more obsolete, in some parts lighter, almost pure white, in others shaded with smoky grey. The whole-coloured Serpent-Eagle occurs but rarely in North-eastern Africa; we found it in winter in the Quola of Western Abyssinia and, at about the same time of year, on the Upper White and Blue Nile; and we also saw a bird, certainly of this species, in the low lands between Semién and Wogara in Abyssinia. Antinori found it in December near Dokah, in East Sennaar; according to Rüppell it occurs occasionally in Abyssinia"*.

I propose now to refer to some South-African specimens which I have recently examined, and which appear to me to illustrate the changes of plumage ordinarily incident to the white-bellied bird, to which, for the sake of distinction, I will provisionally apply Sir A. Smith's specific name of *pectoralis*; and I will number these specimens as I proceed, for the convenience of reference, tracing the changes from the nestling-plumage to that of the fully adult bird.

(No. 1.) The youngest specimen that I have seen† is a male from Kuruman, in the collection of Captain Shelley, which exhibits on many of the rectrices the elongation of the shaft beyond the web which is so frequent in very young birds, one of which even now retains a slight downy tip, whilst several of the primaries are still enclosed at the base in the sheath indicative of a growing feather. Notwithstanding these appearances I think it probable that this bird had left the nest for some weeks, as the margins of the feathers of the mantle are already somewhat abraded, though very much less so than in other more advanced young specimens with which I have compared it, and in which these margins are absolutely worn off, the plumage of all the *Circaëti* being exceedingly subject to deterioration from use before it is renewed by a change of feathers. The coloration of the example now under consideration agrees with that described by Mr. Sharpe as "young," with the following modifications:—The fulvous edgings of the upper parts are relatively broadest on the interscapular feathers and narrowest on the wing-coverts; the under surface (except the throat) is decidedly rufous, and of a darker and richer tinge than in any other fulvous or rufescent specimen that I have examined, and is whole-coloured, except on the tibiæ and abdomen, where the white bases of the feathers are apparent, and where most of the feathers are also narrowly tipped with white; the feathers of the under tail-coverts are rufous, but are similarly tipped; in the wing-linings the smallest under-coverts are rufous, the median the same, mingled with white, and the largest wholly white, except a subterminal transverse bar of pale brown; the axillaries rufous, barred irregularly with white; the posterior primaries and secondaries are dark purplish brown, narrowly tipped with fulvous, and in both the primaries and the secondaries the upper part of the inner web is white, crossed with two more or less perfect bars of dark brown on the primaries, and four on the secondaries; the tail is dark brown, paler on the inner webs of all the rectrices, except the central pair, and crossed with five somewhat indistinct and ill-defined bars of a still darker brown, the last bar being subterminal, and succeeded by a very narrow whitish tip*.

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* Rüppell speaks of "*Circaëtus thoracicus*, Cuv., =*pectoralis*, Smith," as "frequent in Abyssinia," and of "*C. cinereus*, Vieill., =*funereus*," as "occasional in Abyssinia;" *vide* 'Systematische Uebersicht,' p. 10.

† A still younger specimen unfortunately escaped my recollection till after the above was in the printer's hands; it is preserved in the Museum at Cambridge, where I examined it and made the following memorandum respecting it:—"Nestling, with much down remaining; under surface wholly cinnamon-brown; upper surface similar, but with blackish brown centres to the feathers."

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* It may be desirable to compare the above particulars with Sir A. Smith's remarks on the young bird, comprised in his original description of *Circaëtus pectoralis* at p. 109 of the 1st volume of the 'South-African Quarterly Journal;' and as that volume is very scarce, I annex a copy of the passage in question:—

"*Young.* When it leaves the egg it is covered with a dense white down, which, after a few months, is concealed by an uniform light chestnut, or a dull earthy brown plumage. I have met with young specimens of this

(No. 2.) The Norwich Museum possesses a specimen, shot near Potchefstroom on 20th July, which is evidently in the same stage of plumage as No. 1, but much more worn and abraded. In this example the abrasion of the margins has removed all rufous tint from the upper parts, except some very slight remains of it on the lesser wing-coverts; on the lower parts the rufous plumage remains as in No. 1, but is much paler, and evidently faded; the feathers of the under tail-coverts are also for the most part white; no white tips are visible on the abdominal and tibial feathers, having probably been worn off; the tail is greyish brown, with five extremely indistinct darker transverse bars just perceptible on the middle rectrices, and four similar bars, more plainly distinguishable, on the paler inner webs of the remaining tail-feathers. The primaries and secondaries are similarly coloured to those of No. 1; but the inner webs are on the greater portion of their surface pure white, and without transverse markings, except in the case of a single secondary feather, apparently more recently acquired, in which the dark portion is rather deep grey, as in the adult bird, with three dark transverse bars crossing the whole of the outer web and the adjacent parts of the inner one. Mr. Ayres, who obtained this specimen, records the colour of the irides as "light gamboge-yellow."

The next stage appears to be attained by the acquisition of new feathers on the under, but, judging from the specimens

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species of both colours, which might possibly have been different sexes. The primary quill-feathers are the same as in old birds; but the secondaries are less distinctly banded, and the proportion of the white in the bands is smaller, or, indeed, almost wanting, grey being the prevailing colour; the tips are white. The tail is banded; but the colours are in a reversed proportion, dark brownish black or black being the most abundant or ground-hue, and reddish white the most scanty. The latter occurs in the form of narrow transverse bands, about four or five on each feather; and the tips of all have, besides, a narrow edging of dusky white. The tail is also considerably longer in young specimens than in older ones. Legs and toes shaded with brown: claws nearly black: bill dark horn-coloured, shaded with yellow: eyes yellow: length of tail 10⅓ inches."

I have examined, not on the upper surface, or, if at all, very partially so. It is distinguished by the breast, abdomen, and under tail-coverts becoming transversely marked by rows of wood-brown spots on a white ground, producing a considerable resemblance to the immature plumage of *C. gallicus*, as has been already observed by Schlegel and by Von Heuglin in their respective notes on this species, to which I have already referred; the late Jules Verreaux states that he has watched the change from this to the fully adult dress in specimens kept in confinement*.

(No. 3.) The most perfect instance of this phase of plumage which has come under my notice is exhibited in a South-African specimen preserved in the Liverpool Museum, which might almost pass for an example of *C. gallicus*.

The Norwich Museum also possesses some interesting specimens which are more or less completely in this stage, and which it may be desirable briefly to describe, as tending to elucidate the gradual assumption and subsequent loss of the transverse rows of brown spots on the lower surface by which this intermediate condition of plumage is especially characterized.

(No. 4.) One of these specimens, now preserved at Norwich, was obtained in South Africa by the late Sir A. Smith, and, from its appearance, seems to have been kept in confinement. It is in similar plumage to No. 2, except that the tail-feathers and most of the secondaries have already attained the deep grey tint, with dark transverse bars, which is characteristic of the adult bird; but my chief reason for referring to this specimen is to mention the circumstance of four apparently new feathers being visible among the older fulvous plumage of the left side of the breast: these four feathers are dark brown; but all of them have white bases, and two of them also have white tips. Here, if I mistake not, we have the commencement of the intermediate stage of plumage to which I have just referred.

(No. 5.) The next specimen which I propose to notice is a male, obtained by Mr. Ayres near Potchefstroom on 24th

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* *Vide* Ibis, 1862, p. 209.

April. In this bird the coloration of the upper surface is very similar to that of No. 2, but is rather darker, owing to the appearance on the back of several new feathers of a deep purplish brown, with narrow and inconspicuous pale brown tips. The primaries and secondaries resemble those of No. 2; but some of the secondaries are transversely marked on the inner web as in No. 1. The tail is dark brown, with a very narrow paler tip, but with no signs of transverse bars, except some extremely indistinct indications of such markings on the two outermost rectrices on one side of the tail only. The wing-linings and axillaries resemble in coloration and markings those of No. 1; the remaining underparts are like those of No. 2, with the following exceptions: viz. the feathers of the upper breast are decidedly browner, and their shaft-marks are darker and more conspicuous; on the lower breast the feathers appear to be new, with pure white bases comprising the greater part of the feather, the remainder being occupied by a transverse brown mark, slightly tinged with fulvous, and about half an inch in depth, below which a very narrow white tip to the feather is apparent; on the rest of the underparts the feathers, which do not appear to have been renewed, are rather more rufous than in No. 2, but are irregularly crossed and varied with white. Mr. Ayres noted the irides of this specimen as "bright gamboge-yellow."

(No. 6.) Another specimen from the same locality, shot 16th July, is in similar plumage to No. 5, but somewhat more advanced. The upper parts resemble in their coloration those of No. 5; but the wing- and tail-feathers are transversely marked, as in the adult, except that the tail is crossed by five dark bars instead of four, and the interspaces between the dark bars on the outer webs of the secondaries are deep purplish brown instead of brownish grey. The wing-linings of this specimen resemble those of No. 5; the axillary feathers appear to be partly old and partly new, the former being rufous, barred with white, and the latter wholly white, with the exception of a subterminal spot of wood-brown. There is much more white on the remainder of the underparts than in No. 5, especially on the abdomen and tibiæ; and the intervening rufous plumage is much paler in hue and more restricted in extent. Some new feathers on the sides of the breast are marked similarly to the corresponding new feathers in No. 5 ; but the brown spot upon them is rather larger, and without any tinge of fulvous. Similar spots are also visible on the under tail-coverts ; but these differ from the breast-spots in being divided by the shaft-mark, which is white where it passes through these spots, but brown where it intersects the spots on the breast. The irides in this specimen were "bright pale gamboge-yellow."

(No. 7.) A female shot near Potchefstroom on 30th July is still more advanced. In this specimen the upper surface is as in No. 6, but with a larger proportion of new dark brown feathers ; the interspaces between the dark transverse bars on the secondaries are tinged with deep grey, as in the adult ; on the upper breast indications of the commencement of the adult plastron are visible—brown feathers with white bases, but with the brown not so dark as in the adult bird, being massed on the sides of the breast : the two patches of brown thus arranged on either side of the upper breast are divided by a longitudinal interval in which the feathers are white, with only a brown central spot, formed by the widening of the dark shaft-mark. The transverse brown spots on the white ground of the lower breast and abdomen are visible, especially on the former, but are more or less pale, and apparently fading out ; on the flanks and tibiæ they are darker, and, with the exception of those on the upper portion of the flanks, are divided by a white shaft-mark. The axillaries are, for the most part, wholly white; but some of them are slightly spotted with brown. The least under wing-coverts are white, with a brown centre to each feather, the remainder of the wing-lining being entirely white, as are also the under tail-coverts. The irides in this specimen, as noted by Mr. Ayres, were "light gamboge-yellow."

(No. 8.) Another female shot near Potchefstroom, in August, may be said to have attained the adult plumage, with the following exceptions, viz. :—A few of the feathers in the centre of the plastron have not only the bases white, but the sides also; three feathers about the centre of the upper breast, and one on the abdomen, show a pale brown subterminal mark; almost all the feathers on the sides of the breast have similar marks, but of a much darker brown; and on some of these feathers the brown mark is divided by a white shaft-mark; similar spots, also thus divided, are conspicuous on the under tail-coverts; the axillaries and wing-linings, which are pure white in the fully adult bird, are in this specimen spotted with brown, very much as in No. 7, but the spots are less regularly disposed.

(No. 9.) A female shot in the same locality on June 25th is in adult plumage, with the exception of two small dark spots still remaining on the white under surface—one on the breast, and the other on the abdomen; Mr. Ayres notes the colour of the irides in this example as "dark gamboge-yellow."

(No. 10.) Another female, also shot near Potchefstroom in June, is entirely adult, and, according to Mr. Ayres's note, had the irides "bright yellow."

(No. 11.) A specimen from the Cape colony, otherwise in fully adult plumage, is remarkable for having the plastron longitudinally divided by white-edged feathers, as is the case in No. 7; but in the present specimen the space occupied by this division is considerably narrower than in No. 7, no doubt from the bird being older. I have already noticed the slight remains of a similar division in the plastron of No. 8; and it is curious that, though No. 8 is obviously a more immature bird than No. 11, yet in this particular item, but in this only, its change of plumage is more advanced than that of No. 11, showing that the different changes do not always progress *pari passu* in different individuals.

Of the eleven specimens just referred to, all, except Nos. 1 and 3, are preserved in the Norwich Museum.

While some allowance must be made for individual variation in immature specimens, I think it may be safely assumed that the series above described fairly represents the ordinary changes incident to the white-bellied *Circaëtus* (*C. pectoralis* of Smith) in its progress from the nestling-plumage to the fully adult dress.

In addition to the phases of plumage to which I have above alluded, South-African specimens occur the plumage of which is fuliginous above and below, but with white bases to the feathers of the under surface, and with the wing-linings partly fuliginous and partly white. Mr. Sharpe terms this plumage "mature;" but if this phrase is intended to imply that every individual at a certain age attains it, I must express my dissent from such a conclusion, as I believe it to be an exceptional and quasi-melanistic variety, if, indeed, it be not referable, as Rüppell, Schlegel, and Von Heuglin suppose, to a distinct species and, as such, specially entitled to have the specific name of *cinereus.*

In MM. Verreaux and des Murs's notice of "*Circaëtus thoracicus,*" at p. 209 of 'The Ibis' for 1862, reference is made to dark-coloured nestlings in the following words (probably based on information obtained by the late Jules Verreaux during his travels in South Africa):—"le jeune, au sortir du nid, est en effet *brun-enfumé.*"

That rufescent nestlings of *C. pectoralis* also occur is certain; and Sir A. Smith, in his account of that species, from which I have already quoted, appears to refer to two distinct phases of nestling-plumage, describing them as "uniform light chestnut or a dull earthy brown." I therefore doubt not that the fuliginous specimens, which sometimes occur, have worn that garb from the time of leaving the nest, and have never passed through the fulvous or rufescent stage by which other nestlings are distinguished—and that this is equally true, whether they are in reality a melanistic phase of *C. pectoralis* or specifically distinct.

It would seem that the white bases to the feathers of the underparts do not exist in all fuliginous specimens, as I have seen three such in which they are absent: two of these, from Nubia and Bissao respectively, are preserved in the Norwich Museum, and are the only specimens of *C. cinereus* which I have recently been able to examine from any locality north of the equator; the third is from the Humbe, in Southern

Benguela, and is in the possession of Captain Shelley, to whose kindness I am indebted for the opportunity of comparing it with the similar specimens from Nubia and Bissao above referred to.

Du Bocage, at p. 34 of the first volume of his recent work on the Ornithology of Angola, describes, under the head of *Circaëtus cinereus,* two females, one from Maconjo, the other from the Humbe, as having "pas d'espace blanc à la base des plumes du dos et des régions inférieures;" but I have not observed any notice of this peculiarity in the writings of any other ornithologist.

I propose now to allude to some fuliginous specimens, which I have examined, with white bases to the feathers of the lower surface, and subsequently to the three just mentioned, which do not exhibit this peculiarity.

(No. 12.) This is a specimen from Natal in the Norwich Museum, which, in its general aspect, including the markings on the tail, agrees well with the description and figure of of Rüppell's *Circaëtus funereus* (*vide* 'Neue Wirbelthiere,' p. 35, pl. 14); the three narrow pale transverse bands on the upper surface of the tail, however, are whitish brown rather than red-grey ("roth-grauen"), as described by Rüppell. In this specimen these pale bars are lighter on the inner than on the outer web of all the rectrices, except the central pair, but the intervening and much broader dark spaces are equally deep-coloured on both webs. One pair of rectrices are evidently of more recent growth than the remainder, from which, however, they do not differ in markings, or, if allowance be made for some fading, in the coloration of the older feathers. The upper tail-coverts are narrowly tipped with white; and on most of the feathers composing them there is also a white spot on the outer web near the base, which latter is brown; on others there are two such spots, one on each side of the shaft; while in a few cases the feather has no white on it except at the tip. I may add that white tips to these feathers, and also white bases, are usual in the adults of the white-bellied race (*C. pectoralis*), but in only one such specimen (No. 11) have I met with similar white spots on these feathers isolated from the white bases. In the fuliginous bird to which I am now referring, the secondaries are tipped with white, and the primaries also, but more narrowly, in both which respects they resemble those of the adult *C. pectoralis*—but, unlike them, without any trace of transverse bars, the outer webs being merely mottled irregularly with white. Some newly acquired secondary feathers resemble the older ones in all respects; several new feathers which are apparent in the mantle similarly resemble in character the older feathers by which they are surrounded. The wing-linings are fuliginous, but much varied with white, especially in proximity to the metacarpus; the axillaries are pale fuliginous; the feathers on the under surface of the body are a darker fuliginous, with irregular white bases, except on the flanks, tibiæ, and under tail-coverts; the new feathers on the breast and abdomen, of which many are apparent, only differ from the older ones in the latter being paler, from fading; the under tail-coverts are fuliginous, with white tips and two white transverse bars, which on some of the feathers are broken into two white spots, one on either side of the shaft.

(No. 13.) This is also a specimen from Natal, and is preserved in the Liverpool Museum; it agrees generally with No. 12, and, like it, has three narrow whitish bars across the tail, besides the white tip; the upper tail-coverts exhibit from two to three narrow white transverse bars and a white tip.

(No. 14.) A dark newly moulted bird from Natal, in the British Museum, is very similar to Nos. 12 and 13; but the tail has only two light narrow transverse bars, exclusive of the pale tip; many of the abdominal feathers exhibit two brown spots on the white base, one on each side of the shaft.

(No. 15.) A South-African specimen, also in the British Museum, resembles No. 14, but is rather less darkly coloured; it has a less proportion of white on the bases of the abdominal feathers, and none on the under tail-coverts. There are four narrow pale bars on the tail, besides the tip; but the uppermost one is imperfect.

(No. 16.) A fuliginous specimen in the Museum at Brussels has five narrow pale bars on the tail; but in this also the uppermost bar is imperfect. When I examined this specimen I unfortunately omitted to ascertain whether it had the bases of the pectoral and abdominal feathers white; and I am also unable to say in what part of Africa it was obtained.

(No. 17.) A fuliginous example from Bissao, in the Norwich Museum, marked by the late MM. Verreaux as a female, only differs from No. 12 in the following particulars, viz.:—there are no white bases to the feathers of the under surface, and no white tips or markings on the under tail-coverts; the narrow transverse markings on the tail, which agree in number and character with those of No. 12, are, with the exception of the whitish tip, greyer on the middle pair of rectrices and on the outer webs of the remaining tail-feathers; in the wing-linings the smaller under-coverts are wholly fuliginous; but some feathers of the larger under-coverts are entirely a greyish white; none of the feathers in the wing-linings are particoloured. In this specimen many new feathers are appearing, both on the mantle and on the under surface, which entirely resemble the older feathers, allowing for the latter being somewhat faded.

(No. 18.) A similar specimen from Nubia, in the Norwich Museum, agrees with No. 17 in all respects, except that the under tail-coverts are marked with white, as in No. 12, and the white tips to the upper tail-coverts are more conspicuous than in No. 17; also the colour of the narrow transverse bands on the tail corresponds with those on the tail of No. 12; several of the feathers on the underparts have been recently acquired, and agree in colour with the older feathers, allowing, as before, for some fading of the latter.

(No. 19.) Captain Shelley's fuliginous female from the Humbe, in Benguela, also agrees with No. 17; but the uppermost pale narrow bar on the tail is less perfect; two new rectrices resemble the older ones in their markings; but the pale bars on the new rectrices are grey, as in No. 17, and on the older ones browner, as in No. 12. This specimen is in moult, both above and below; and the same remark which I have made as to the similarity of colour in the old and new feathers in Nos. 12, 17, and 18 applies in this instance also. The iris in this specimen is noted as yellow. This is the only fuliginous example I have examined in which the colour of the iris has been recorded; but I observe that Von Heuglin (*loc. cit.*) indicates a difference of tint in the irides of the two races, describing *C. pectoralis* as "iride flavissimâ," and *C. cinereus* as "iride fulvescente;" the irides in the type specimen of Rüppell's *C. funereus* were described by him as chestnut-brown ("kastanienbraun").

I annex some notes of comparative measurements which I have taken from sundry specimens of *C. pectoralis* and *C. cinereus*; these data relate to as many specimens as the memoranda in my possession enable me to include in this comparison:—

	inches.
Wing in 16 specimens of *C. pectoralis* varies from	20·5–22·7
„ in 8 „ *C. cinereus* „ „	19·2–22·5
Tarsus in 18 specimens of *C. pectoralis* varies from	3·4– 3·7
„ in 8 „ *C. cinereus* „ „	3·5– 4·1
Middle toe *s. u.* in 18 specimens of *C. pectoralis* varies from..	1·6– 2·2
„ in 8 „ *C. cinereus* „ „ ..	1·9– 2·4
Culmen, exclusive of cere—	
in 10 specimens of *C. pectoralis* varies from	1·5– 1·7
in 5 „ *C. cinereus* „ „	1·9– 2·1

It will be seen from the above figures that in the specimens I have examined the measurements of the culmen in *C. cinereus* constantly exceed those in *C. pectoralis*, and that the same excess of size occasionally obtains also in the tarsus and middle toe; and this fact, which, to a certain extent, accords with the observations of Rüppell and Von Heuglin*, seems difficult to account for if *C. pectoralis* and *C. cinereus* be really but one and the same species.

Although Von Heuglin speaks of the transverse bars on the tail as varying in different specimens of *C. cinereus*, and although, as already noted, I have myself found their number to be somewhat uncertain, yet the narrowness of the pale bars, averaging, I think, rather less than half an inch in depth, seems to be a constant character, and is one which I have not met with in any stage of *C. pectoralis.*

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* These authors appear to regard the excess of size in the tarsus in *C cinereus* as more constant than I have found it.

The moulting specimens of *C. cinereus,* to which I have alluded, show indisputably that the fuliginous colour of the body-plumage is retained for more than one suit of feathers; but, on the other hand, the white bases to the pectoral and abdominal feathers of some specimens, and also the white mingled with the fuliginous plumage in the wing-linings, look very like an approach towards the white-bellied adult plumage of *C. pectoralis.*

At the risk, I fear, of being too prolix, I have put together such facts as I have been able to collect on the curious subject of the changes incident to *C. pectoralis,* and of the possible specific distinction between it and *C. cinereus;* and it is to be hoped that naturalists in Africa will be able, by further observations, to settle the latter question, which must, for the present, remain an open one. I would add that it will be especially desirable to ascertain whether the fuliginous birds always pair between themselves, or whether they sometimes interbreed with those that are white-bellied—also to ascertain the first plumage of their young, and whether fuliginous nestlings are ever really produced, as has been asserted, from white-bellied parents.

I must postpone to my next paper the consideration of the genus *Helotarsus,* with which I hope to complete my review of the Circaëtine group.

[To be continued.]

XII.—*Revision of the Species of the Cotingine Genus* Pipreola.

By P. L. Sclater, M.A., Ph.D., F.R.S.

(Plate VI.)

In 1849 Lafresnaye* conceived the idea of separating the Green Cotingas, allied to *Ampelis viridis,* Lafr. et D'Orb., into a subgenus, for which he proposed the name *Pyrrho-*

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* In his commentary on Tschudi's 'Fauna Peruana,' Rev. Zool. 1849, p. 103.

rhynchus, from the red colour of their bills. Very shortly afterwards Dr. Hartlaub adopted the term as generic, and took the opportunity of giving a list of the five species of the group known to him, when figuring a recently described addition which he had made to it*.

In his 'Conspectus' (1854) Bonaparte adopted Lafresnaye's genus and Hartlaub's list of species; but a few years later Cabanis and Heine, in the second part of the 'Museum Heineanum,' came to the conclusion that, as regards the generic term *Pyrrhorhynchus,* Lafresnaye had been anticipated by De Filippi, who, in 1847†, had proposed to use the term *Euchlornis* for the same group. This term Cabanis and Heine emended into *Euchlorornis,* supposing the derivation of it to be εὖ, χλωρὸς, and ὄρνις.

But both these generic appellations must, I think, give way to *Pipreola* of Swainson, established in 1838 for the reception of his *P. chlorolepidota.* Unfortunately Swainson's type is not to be found at Cambridge, and I have not been able to ascertain that it exists in any collection. But there can be no reasonable doubt, I think, that the bird which he described under this name was a female of one of the species of this group‡, and that the term *Pipreola,* having been properly defined, ought to be used for the genus.

The synonymy of the genus PIPREOLA will therefore stand as follows:—

(1838) *Pipreola,* Sw. An. in Men. p. 357. Type *P. chlorolepidota.*

(1847) *Euchlornis,* Filippi, Mus. Mediol. An. Vert. cl. ii. p. 31. Type *P. riefferi.*

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* "Note monographique sur le sous-genre *Pyrrhorhynchus,*" Rev. Zool. 1849, p. 493.

† Museum Mediolanense, Animalia Vertebrata, Classis ii. Aves, p. 31. *Cf.* Cornalia, Rev. Zool. 1853, p. 105. I am much indebted to Dr. Cornalia for sending me a copy of De Filippi's tract, in the appendix to which several other new genera and species are characterized.

‡ The skin which I formerly referred to *P. chlorolepidota* seems to be a female of *P. formosa,* or of a nearly allied species. But, from its size and locality, *P. chlorolepidota* of Swainson is *more likely* to be a female of *P. sclateri.* (See remarks below, p. 173.)

(1849) *Pyrrhorhynchus,* Lafr. Rev. Zool. 1849, p. 103. Type *P. viridis.*

(1854) *Pyrorhynchus,* Bp. Consp. Vol. Anisod. p. 5. Type *P. viridis.*

(1859) *Euchlorornis,* Cab. et Heine, Mus. Hein. ii. p. 103. Type *P. riefferi.*

Of this genus I am now acquainted with nine species, which may be arranged as follows :—

a. Secundariis externis albo terminatis :	
a'. cervice usque ad medium pectus viridi	1. *riefferi.*
b'. cervice nigrâ,	
caudæ apice concolori	2. *melanolæma.*
caudæ apice albo	3. *viridis.*
c'. gutture nigro : cervice sanguineo-rubra	4. *formosa.*
d'. gutture et cervice sanguineo-rubris,	
ventre flavo	5. *frontalis.*
ventre viridi	6. *sclateri.*
e'. gutture et cervice flavis	7. *aureipectus.*
b. Secundariis externis concoloribus :	
pileo nigro	8. *jucunda.*
pileo viridi	9. *elegans.*

I proceed to a short description of these nine species.

1. PIPREOLA RIEFFERI.

Ampelis riefferi, Boiss. Rev. Zool. 1840, p. 3.

Euchlornis riefferii, De Fil. Mus. Med., Aves, p. 12.

Pyrrhorhynchus riefferi, Bp. Consp. p. 177.

Pipreola riefferi, Sclater, P.Z.S. 1854, p. 113, 1855, p. 153; Ann. N. H. ser. 2, xvii. p. 469; et Cat. Am. B. p. 254.

Euchlorornis riefferi, Cab. et Hein. Mus. Hein. ii. p. 103.

Suprà viridis : pileo saturatiore : secundariis externis albo terminatis : subtùs ad medium pectus obscurè viridis, fasciâ irregulari colli utrinque et abdomine medio flavis ; lateribus viridi flavoque mixtis : rostro et pedibus rubris : long. tota 6·5, alæ 3·5, caudæ 2·8. *Fem.* pileo et cervice clarioribus, dorso concoloribus : fasciâ colli lateralis nullâ.

Hab. Interior of Columbia (Bogota), and Western Ecuador (in the vicinity of Quito).

Mus. P. L. S. et S.-G.

This species is most common in "Bogota" collections, and was originally based upon specimens from that locality. Mr. Salmon's skins from the state of Antioquia likewise belong to this form; and I cannot distinguish examples from the vicinity of Quito and other districts of Western Ecuador, though at high elevations in Ecuador the next form seems to be also found.

2. PIPREOLA MELANOLÆMA.

Pipreola melanolæma, Sclater, Ann. & Mag. N. H. ser. 2, xvii. p. 469; P. Z. S. 1860, p. 67; et Cat. Am. B. p. 254; Scl. et Salv. P. Z. S. 1868, p. 628, et 1870, p. 781; Nomencl. p. 58.

Euchlorornis melanolæma, Cab. et Hein. Mus. Hein. ii. p. 103.

Suprà viridis, capite nigro, secundariis extùs albo terminatis; subtùs ad medium pectus saturatè nigra, fasciâ irregulari colli utrinque et abdomine medio flavis: lateribus viridi et flavo mixtis: rostro et pedibus rubris: long. tota 7·5, alæ 3·6, caudæ 3·1. *Fem.* pileo et cervice viridibus dorso concoloribus, et fasciâ cervicis lateralis nullâ diversa.

Hab. Venezuela and Eastern Ecuador.

Mus. P. L. S. et S.-G.

Obs. Sp. a præcedente capite et collo undique nigris distinguenda.

This is a barely separable form of the last species, originally established upon specimens from Venezuela. Hr. Goering obtained examples of it both near Caracas and at Merida.

In Ecuador the same form would appear to occur occasionally at high altitudes; at least I cannot distinguish the specimen obtained at Chillanes in 1858 by Fraser from the Venezuelan bird; and Mr. Buckley's skins from Intaj likewise belong to this form.

3. PIPREOLA VIRIDIS.

Ampelis viridis, Lafr. et D'Orb. Syn. Av. p. 40; D'Orb. Voy. p. 298, t. xxx.; Tsch. F. P. Aves, p. 135.

Pipreola melanolæma, Scl. et Salv. P. Z. S. 1873, pp. 186, 780.

Pipreola viridis, Scl. Ann. N. H. ser. 2, xvii. p. 469; Tacz. P. Z. S. 1874, p. 540.

Suprà viridis, capite toto nigro: secundariis extùs albo terminatis: subtus ad medium pectus nigra, pileo concolor: fasciâ irregulari colli utrinque et abdomine medio flavis: lateribus et crisso viridi et flavo mixtis: caudâ nigrâ, rectricibus mediis et lateralium parte externâ dorso concoloribus: caudæ fasciâ terminali albâ: rostro et pedibus rubris: long. tota 7·5, alæ 3·6, caudæ 3·1. *Fem.* mari similis, sed capite et cervice dorso concoloribus et fasciâ cervicis flavâ caret.

Hab. Bolivia and Peru.

Mus. P. L. S. et S.-G.

Obs. Species a duabus præcedentibus caudæ apice albo distinguenda.

This, a more distinct southern form of *P. riefferi,* is at once recognizable by its white-tipped tail, of which, however, there is just a trace in skins of the *P. melanolæma* from Ecuador. Bolivian skins also have the yellow on the underparts brighter and more extended; but in those from Peru this feature is not so pronounced. Mr. Whitely's skins from the Andes of Cuzco are certainly referable to this form, not to *P. melanolæma,* as given P. Z. S. 1873, as are likewise those of Jelski from the district of Junin. Bolivian specimens now before me were obtained by Mr. Buckley.

4. PIPREOLA FORMOSA.

Ampelis formosa, Hartl. Rev. Zool. 1849, p. 493, t. 14.

Pyrrhorhynchus formosus, Bp. Consp. i. p. 177.

Euchlorornis formosa, Cab. et Heine, Mus. Hein. ii. p. 103.

Pipreola formosa, Scl. Ann. N. H. ser. 2, xvii. p. 469; Scl. et Salv. P. Z. S. 1868, p. 172; Nomencl. p. 58.

Suprà viridis, capite nigro: secundariis externis ad apices latè albis: subtùs flava, gulâ nigrâ, pileo concolori: pectore sanguineo-rubro: lateribus et crisso viridi mixtis: rostri nigri tomiis pallidis: pedibus corylinis: long. tota 6·2, alæ 3·5, caudæ 2.3 *Fem.* capite viridi, corpore toto subtùs flavo viridi transundulato et maculâ gulari solum sanguineâ diversa.

Hab. Venezuela, Caripé (*Goering*).

Mus. P. L. S. et S.-G.

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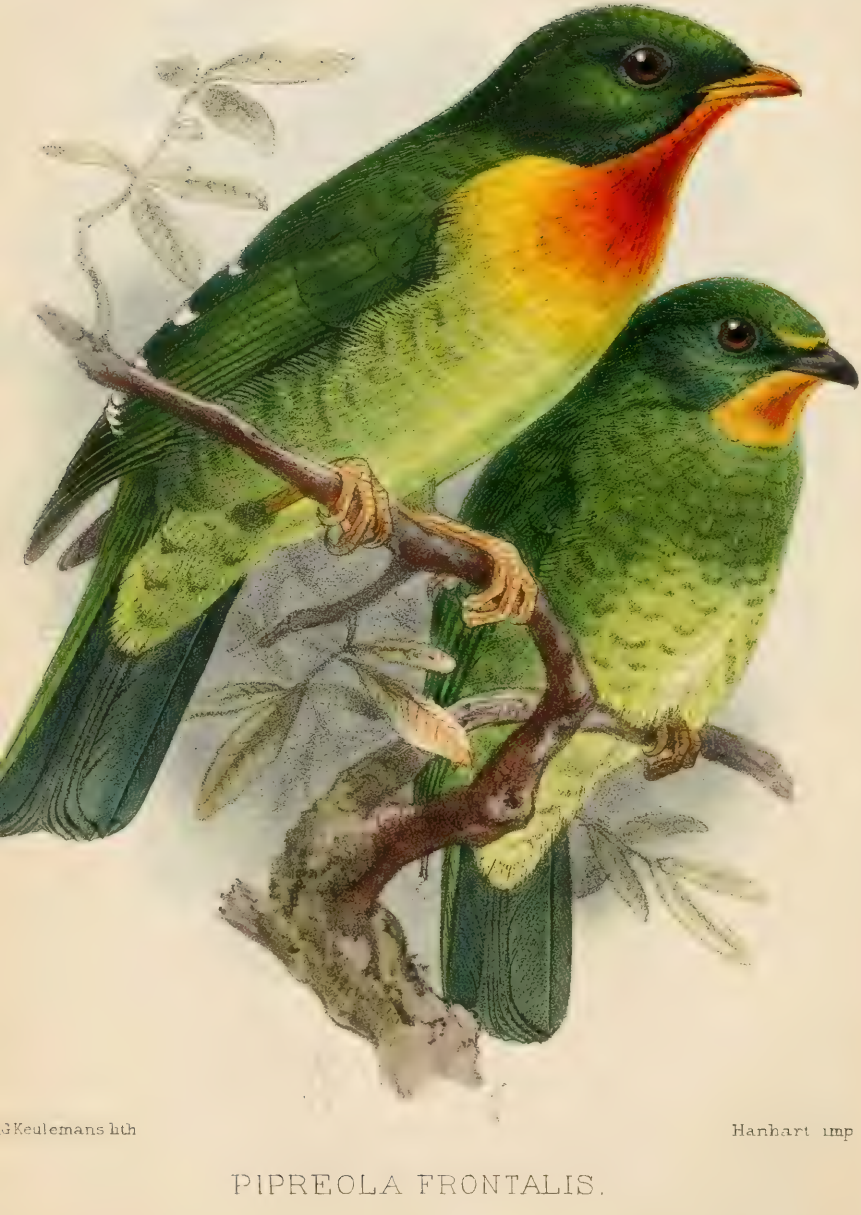
Ibis.1878 Pl. VI



G.Keulemans lith.

Hanhart imp.

PIPREOLA FRONTALIS.

This beautiful species is, I believe, quite peculiar to the forests of Venezuela, where Hr. Goering obtained specimens on the Montaña of Tereven, near Caripé, and in the vicinity of Caracas. It is easily recognized by its black throat and splendid scarlet breast, which passes into the brilliant yellow of the belly. The iris is described by Goering as reddish brown.

5. PIPREOLA FRONTALIS. (Plate VI.)

Euchlornis frontalis, Scl. P. Z. S. 1858, p. 447, et Ann. & Mag. N. H. ser. 3, vol. iii. p. 443.

Suprà viridis, fronte angustâ nigricante: secundariis externis albo terminatis: subtùs flava, gulâ et pectore toto saturatè sanguineo-rubris, lateribus et crisso viridi mixtis: rostro rubro, pedibus flavis, unguibus nigris: long. tota 5·7, alæ 3·4, caudæ 2·75. *Fem.* fronte angustâ flavicante, et corpore subtùs viridi, gulâ solum flavâ rubro perfusâ, et ventre flavicanti mixto diversa.

Hab. Bolivia, Tilotilo Yungas (*Buckley*).

Mus. S.-G.

I am indebted to Messrs. Salvin and Godman for the privilege of describing and figuring both sexes of this splendid species, which I established in 1858 from a single female specimen belonging to the Derby Museum.

The bird is a near ally of *P. sclateri*, but is at once recognizable as distinct by the yellow overspreading the belly, by the greater extent of the scarlet neck, and by its much larger size.

Besides the pair above referred to, which were obtained by Mr. Buckley in Bolivia, there is a fine male of this species in the Museum of Brussels, for an opportunity of examining which I am greatly indebted to M. Alphonse Dubois and to the authorities of that Institution. I am informed that there are likewise examples of this bird in the Leiden Museum, and in the collection of Count H. Turati at Milan.

The original specimen of my *Euchlornis frontalis*, for the opportunity of reexamining which I am much indebted to the courtesy of Mr. T. Moore, curator of the Derby Museum, Liverpool, is so similar to the female figured, that there can be no doubt of the identity of the species. It differs only in the absence of any scarlet patch in the centre of the yellow throat. The four specimens examined measure as follows:—

	Long. t. in.	Alæ. in.	Caudæ. in.	Tarsi. in.
a. ♂ Mus. S.-G.	5·7	3·4	2·75	0·75
b. ♀ Mus. S.-G.	5·7	3·4	2·60	0·75
c. ♀ Mus. Derb.	6·2	3·45	2·5	0·75
d. ♂ Mus. Brux.	6·3	3·4	2·3	0·75

6. PIPREOLA SCLATERI.

Euchlornis sclateri, Corn. Contr. Orn. 1852, p. 133, pl. 101; Rev. et Mag. de Zool. 1853, p. 107, pl. 4.

Pipreola sclateri, Scl. P. Z. S. 1854, p. 113, et Ann. & Mag. N. H. ser. 2, xvii. p. 469; Scl. et Salv. Nomencl. p. 58.

Suprà psittaceo-viridis: remigibus primariis et secundariis et rectricibus maculâ terminali albâ præditis: subtùs vix dilutior, gulâ et pectore toto saturatè coccineis, plumis subtùs flavicantibus: ventre imo et crisso flavidis: rostro pallido, apice nigro; pedibus flavis: long. tota 4·8, alæ 3·0, caudæ 1·6, tarsi 0·7.

Hab. Eastern Ecuador, Rio Napo.

Mus. Brit.

Obs. A *P. frontali* crassitie minore et ventre viridi diversa.

In 1852 I first saw an example of this pretty species in the Museo Civico at Milan, and pointed out to Dr. Cornalia the probability of its being new to science*. Dr. Cornalia in describing it was pleased to compliment me by calling it after my name.

There are two specimens of this bird in the British Museum, both obtained from Mr. Gould, and said to have been originally received from the Rio Napo. One of them, from which the above description has been taken, is adult, the other is a young bird, and has the crimson colour confined to the throat. I have not yet seen the female of this species. There is also a male example of this species in the Museum of Brussels, which I have had an opportunity of examining through the kindness M. Alphonse Dubois.

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* There is, unfortunately, no record of the locality of this specimen; but the probability is that it was one of the birds obtained by the Italian traveller Osculati when he descended the Napo in 1847. See Osculati's 'Esplorazione delle Regioni Equatoriali,' Milan, 1854.

P. sclateri may be readily distinguished from all other species of the genus by its small size and crimson breast-patch. In the latter respect it comes next to *P. frontalis*, but may be known from that bird by its belly being green, like the back, except in the lowest portion.

7. PIPREOLA AUREIPECTUS.

Ampelis aureipectus, Lafr. Rev. Zool. 1843, p. 68, et Mag. de Zool. 1843, pl. 39.

Pipreola aureipectus, Sclater, P. Z. S. 1855, p. 153; Ann. & Mag. N. H. ser. 2, xvii. p. 469, et Cat. A. B. p. 255; Scl. et Salv. Nomencl. p. 58.

Euchlorornis aureipectus, Cab. et Hein. Mus. Hein. ii. p. 103.

Pyrrhorhynchus aureipectus, Bp. Consp. p. 177.

Suprà viridis, remigum apicibus externis angustè albis: subtùs flava, pectore toto aureo, lateribus viridi obsitis: rostro rubro: pedibus fuscis: long. tota 6·8, alæ 3·5, caudæ 2·7. *Fem.* subtùs viridis, in gutture et ventre medio flavo strigata.

Hab. Venezuela, Caracás (*Goering*): Columbia, Antioquia (*Salmon*).

Mus. P. L. S. et S.-G.

This is not an uncommon species in Venezuelan collections, but seems to be confined to the wood-region of the coast-district. It extends also into the adjacent Republic of Columbia, as Mr. Salmon has forwarded examples of both sexes from the province of Antioquia, but is by no means frequently met with in "Bogota" collections.

The female in this species is longitudinally striated below, as in *P. jucunda*, not cross-banded as in *P. frontalis* and *P. formosa*.

8. PIPREOLA JUCUNDA.

Pipreola jucunda, Sclater, P. Z. S. 1860, p. 89, pl. 159, et Cat. A. B. p. 255; Scl. et Salv. Nomencl. p. 58.

Suprà saturatè viridis, capite et gulâ nigris: plagâ magnâ pectoris nigro circumdatâ aurantiaco-rubrâ: abdomine flavo, lateribus viridibus: rostro rubro: pedibus carneis: long. tota 6·5, alæ 3·8, caudæ 2·4. *Fem.* unicolor viridis, pectore et ventre medio flavo strigatis.

Hab. Ecuador.

Mus. P. L. S. et S.-G.

Obs. Species pectore aurantiaco nigro circumdato notabilis.

This beautiful species was first discovered by Mr. Fraser in the Western Andes of Ecuador, north of Quito, in 1859. Several examples of it have occurred in Quitan collections since that period; but the bird is by no means common.

In Mr. Buckley's recent collection from Ecuador the only example of the female that I have yet met with occurs. This is now in Messrs. Salvin and Godman's collection.

9. Pipreola elegans.

Ampelis elegans, Tsch. Wiegm. Arch. 1843, i. p. 385, et Fauna Per. p. 135.

Pipreola elegans, Scl. Ann. & Mag. N. H. ser. 2, xvii. p. 469 (1856).

Viridis, in capite paulo obscurior: fronte et capitis lateribus et gulâ summâ nigris: plagâ magnâ pectorali nigro subtus marginatâ croceâ: abdomine medio flavo: lateribus viridibus: rostro flavo, pedibus pallidè carneis: long. tota 7·0, alæ 3·8, caudæ 3·1.

Hab. Andes of Middle Peru (*Tschudi*).

Mus. Novo-Castellano.

Obs. Sp. *P. jucundæ* proxima, sed pileo viridi et pectore croceo neque aurantiaco dignoscenda.

I have as yet seen but a single individual of *Pipreola elegans*, the type specimen, which I examined at Neuchâtel many years ago, and which I have now again before me, thanks to the kindness of M. Coulon.

In his 'Fauna Peruana,' Tschudi has stated that this species is the same as *P. aureipectus*; but this is quite an error, as I pointed out in 1856 (*l. s. c.*). Its nearest ally is, in fact, *P. jucunda*; and these two species differ from all others of the genus in the outer secondaries being without any traces of white terminations.

Besides these nine species, which I regard as firmly established, there are two uncertain species which require mention. They are:—

1. *Pipreola chlorolepidota* of Swainson, above mentioned, which was probably, I think, based upon a female of *P. sclateri.*

2. A specimen in the Museum of Neuchâtel, obtained in Peru by Tschudi, and considered by him, as I understand, a female of his *Ampelis elegans,* although not described as such. This is certainly not the female of *P. elegans,* as it shows conspicuous white spots on the outer webs of the ends of the secondaries. It comes nearer to *P. formosa,* and is probably the female of a species allied to *P. formosa,* of which the male is unknown to us. I am in some doubt whether the female specimen from the Rio Napo in my collection, which I formerly treated as *P. chlorolepidota* (P. Z. S. 1854, p. 113, et 1859, p. 441, et Cat. A. B. p. 254), belongs to this same species or to *P. formosa.* I trust we may soon obtain examples of the male sex of this interesting bird, which may help us to solve the question.

XIII.—*Contributions to the Ornithology of Siberia.*

By Henry Seebohm.

During the last few years considerable efforts have been made, principally by Professor Nordenskiöld of Stockholm and Captain Wiggins of Sunderland, to reopen to European commerce the ancient route to Siberia through the Kara Sea. Last year (1876) Captain Wiggins left Sunderland on the 8th of July in the arctic steam-yacht 'Thames' (about 120 tons), and entered the Kara Sea on the 3rd Aug. He spent some time in surveying the coast, and anchored in the gulf of the Obb on the 7th of Sept. On the 23rd of Sept. he began to ascend the Yen-e-say′[*]; and on the 17th of October he had succeeded in making about a thousand knots against stream, and laid his vessel up in winter-quarters just within the entrance of the Koo-ray′-i-ka river, on the arctic circle, where she was frozen up the next morning. When the ice on the river had frozen sufficiently hard to make sledging safe, Capt. Wiggins left his ship in charge of the crew, and returned to England by the overland route.

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[*] In this paper I have endeavoured to spell all the Russian proper names phonetically, showing also the syllable upon which the accent must be laid, a matter of great importance in the Russian language.

I did not meet Capt. Wiggins until the 24th of February; but finding that he was intending to return to his ship almost immediately, I came to the conclusion that an opportunity of visiting the Yen-e-say′ in company with a gentleman who knew the way so well might never occur again, and I hastily made up my mind to return with the captain to his ship, and take my chance of coming home in her by the Kara Sea. I am much indebted to Count Schouvaloff for kindly providing me, almost at a moment's notice, with letters of introduction, which proved of the greatest service to me.

We left London on the evening of the 1st of March, and, after spending a few days in St. Petersburg, reached Nishni Novgorod on the morning of the 10th, a distance of about 2400 English miles. At Nishni we bought a sledge, and travelled over the snow 3240 English miles, employing for this purpose about a thousand horses, sixteen dogs, and forty reindeer. We left Nishni on the evening of the 10th of March, and travelled day and night in a generally easterly direction, stopping a couple of days at Tyn-maiu′, and a day at Omsk, and reached Kras-no-yarsk′ on the morning of the 2nd of April, soon after crossing the meridian of Calcutta. We rested a day in Kras-no-yarsk′, and sledged thence nearly due north, spending four days in Yen-e-saisk′ and three days in Toor-o-kansk′, and reached the 'Thames' on the Koo-ray′-i-ka in the afternoon of the 23rd of April.

For the first few days we found sledge-travelling somewhat irksome; but we soon got into the full swing of it. After having sledged a thousand miles or so, we began to feel that the process might go on for weeks or months, or even years, without serious results. I soon began to enjoy it. My sledge-fever entirely left me; and I used to find a pleasant lullaby in the never ceasing music of the " wrangling and the jangling of the bells." However rough the road was, I enjoyed a good night's rest; and if an unusually heavy "lee lurch," or "weather roll," jolted me against my companion, we only muttered that there was "a heavy sea on," and dozed off again. Snow, wind, rain, sunshine, day, night, hills, valleys, plains, rivers, good roads, bad roads, it was all the same; on we went, and nothing stopped us. The scenery through which we passed was very various. The first thousand miles was hilly and well wooded. One might imagine one was sledging through an endless Sherwood Forest, with a hundred miles of the Peak of Derbyshire placed in the middle to represent the Urals. The ground was covered with from two to three feet of snow. Sometimes we seemed to be sledging down a "broad drive," sometimes crossing a peak, and occasionally passing through a village. The forests were principally spruce-fir, with a little larch and Scotch fir, and plenty of birches. Sometimes we sledged for miles through avenues of pines. The Ural range is a succession of hills, which it took us some time to get through; but the loftiest peak can scarcely be dignified with the name of mountain. Between Tyu-main′ and Tomsk we had nearly a thousand miles of a totally different class of scenery. The steppes of South-western Siberia might be compared to Salisbury plains. As far as the eye could reach, nothing was visible but snow, sky, and telegraph-lines. Now and then we came upon a few stunted birches; and every fifteen or twenty miles we passed through a village. About a hundred miles before reaching Tomsk we again found ourselves amongst hills and forests, which continued until the road permanently established itself down the broad river.

The Yen-e-say′ is said to be the third largest river in the world. In Yen-e-saisk′ the inhabitants claim that the waters of their river have flowed at least two thousand miles (through Lake By-kal′) to their town. In Yen-e-saisk′ the river must be more than a mile wide. From Yen-e-saisk′ to the Koo-ray′-i-ka is about eight hundred miles. In this distance it has gradually increased to a little more than three miles wide. From the Koo-ray′-i-ka to the limit of forest-growth, where the delta may be said to begin, is generally reckoned at another eight hundred miles, for which distance the river will average at least four miles in width. To this we must add a couple of hundred miles of delta, and another couple of hundred miles of lagoon, each of which will average twenty miles in width, if not more.

When we reached the ship we found the crew well and hearty. They had been amply provided with lime-juice and dried vegetables; and no symptoms of scurvy presented themselves. On the other hand, we afterwards learned that the crew of a Russian schooner, which had wintered four degrees further north without having been supplied with these well-known preventives, had suffered so severely from scurvy that only the mate survived the winter.

Our winter-quarters were very picturesque. The 'Thames' was moored close to the north shore of the Koo-ray′-i-ka, at the entrance of a little gully, into which it was the captain's intention to take his ship as soon as the water rose high enough to admit of his doing so, and where he hoped to wait in safety the passing away of the ice. On one side of the ship was the steep bank of the river, about a hundred feet in height, and covered with snow, except here and there, where it was too perpendicular for the snow to lie. On the top of the bank was the house of a Russian peasant and merchant, with stores and farm-buildings adjacent, and a bath-house, occupied by an old man who earned a living by making casks. One of the rooms in this house was occupied by the crew of the 'Thames;' and after they had returned to the ship I and my servant took possession and made it our headquarters for bird-skinning &c. As we stood at the door of this house, on the brow of the hill, we looked down onto the "crow's-nest" of the 'Thames.' To the left the Koo-ray′-i-ka, a mile wide, stretched away some four or five miles, until a sudden bend concealed it from view; whilst to the right the eye wandered across the snow-fields of the Yen-e-say′, and by the help of a binocular the little village of Koo-ray′-i-ka might be discerned about four miles off, on the opposite bank of the great river. The land was undulating rather than hilly, and everywhere covered with forest, the trees reaching frequently two, and in some rare instances three, feet in diameter. The depth of the snow varied from four to six feet; and travelling without snow-shoes, except on the hard-trodden roads, was of course utterly impossible. I generally made two rounds a day through the forest, and soon exhausted the ornithology of the district. During the first week I succeeded in identifying twelve species of birds. For the next four weeks I only increased my list by a weekly average of three species. June is the month in which nearly all migratory birds arrive in the arctic circle. In the three weeks between the 29th of May and the 18th of June I added sixty-five birds to my list, and afterwards only occasionally picked up a new bird which had escaped my notice.

We experienced great variety of weather on our journey out. In St. Petersburg we alternated between a slight thaw and a gentle frost. In Moscow and Nishni the snow was melting rapidly. On the Volga we had occasionally to sledge through a foot of water and half-melted snow. Over the Ural hills we had bright sunshine and hard frost. Across the steppes the weather was mild, but there was no absolute thaw, and we had now and then slight snow-storms. After leaving Tomsk the weather became decidedly milder; and when we reached Kras-no-yarsk′ we found a warm south-wester blowing, the streets running with water, and everybody travelling on wheels. Our journey northwards was a complete race with the south wind. The red hills of Kras-no-yarsk′ were already bare of snow; the south-wester continued blowing as warm as ever; sledge-travelling had, for the time being become impossible, and we were obliged to organize a caravan. For two stages we travelled in a tyel-ay′-ga, with one tar-an-tass′ for our baggage, and a second for the empty sledge. For the next two stages the road was covered with snow, though it was somewhat soft; but we dismissed a couple of our equipages, travelling ourselves in the sledge, and retaining only one tar-an-tass′ for the baggage. For the rest of the journey to Yen-e-saisk′ we had brilliant sunshine and hard roads. The south wind, however, overtook us before we left that town, and for some days we had very sloppy travelling; but we pressed on day and night until we reached the entrance to the Kah′-min Pass, the most dangerous part of the journey, where the river flows through a comparatively narrow defile, between high walls of limestone rocks, with such velocity that in the middle of the stream open water remains all the winter. We reached the station before this pass in the evening, in a drenching rain, the first shower we had experienced, and were told that it was impossible to proceed until a frost should set in. When we rose in the morning we were both surprised and delighted to find the thermometer at or near zero; and the remainder of our journey was accomplished without a thaw. When we arrived at the ship, we found that it was still winter, and were told that there had not been a sign of rain since last autumn. April went by and May came in, but still there was no sign of summer, except the arrival of some of the earliest migratory birds. We generally had a cloudless sky; and the sun was often burning hot. Here and there, on some steep bank exposed to the south, a slight impression was made upon the snow; but not a drop of water survived the night frosts. On the 9th, 10th, and 11th of May we had rain for the first time, and the prospects of summer looked a little more hopeful. The rest of May, however, was more dreary and wintry than ever, alternations of hard frosts and driving snow-storms; but the river was slowly rising, and outside the thick centre ice was a strip of thin newly frozen ice. There was, however, little or no change in the appearance of the snow. Up to the end of May the forces of winter had gallantly withstood the fiercest attacks of the sun, and remained masters of the field. On the 1st of June the sun, baffled at all points, entered into an alliance with the south wind, and a combined attack was made upon the winter forces. The battle raged for fourteen days, the battle of the Yen-e-say′, the great event of the year in this cold country, and certainly the most stupendous display of the powers of nature that it has ever been my lot to witness. On the morning of the 1st of June the pressure underneath the ice caused a large field, about a mile long and a third of a mile wide, opposite the lower angle of junction of the Koo-ray′-i-ka and the Yen-e-say′, to break away. About half the mass found a passage down the strip of newly formed thin ice, leaving open water behind it. The other half rushed headlong onto the steep banks of the river. The result of the collision was a little range of mountains, fifty or sixty feet high, and picturesque in the extreme. Huge blocks of ice, six feet thick and twenty feet long, in many places, were standing perpendicular, whilst others were crushed up into fragments like broken glass; and in many other places the ice was piled up in layers one over the other. The real ice on the river did not appear to have been more than two and a half feet thick, clear as glass, and blue as an Italian sky. Upon the top of this was about four feet of white ice. This was as hard as a rock, and had, no doubt, been caused by the flooding of the snow when the waters of the river had risen, and its subsequent freezing. Upon the top of the white ice was about eighteen inches of clean snow, which had evidently never been flooded. When we turned into our berths in the evening the captain thought it most prudent to institute an anchor-watch. We had scarcely been asleep an hour before the watch called us up with the intelligence that the river was rising rapidly, and that the ice was beginning to crack. We immediately dressed and went on deck. We saw at once that the Yen-e-say′ was rising so rapidly that it was begining to flow up its tributaries. A strong current was setting up the Koo-ray′-i-ka, and small floes were detaching themselves from the main body of the ice and were running up the open water. By-and-by the whole body of the Koo-ray′-i-ka ice broke up and began to move up stream. Some of the floes struck the ship some very ugly blows on the stern, doing considerable damage to the rudder; but open water was beyond, and we were soon out of the press of ice, with, we hoped, no irretrievable injury. All this time we had been getting steam up as fast as possible, to be ready for any emergency. It was hopeless to attempt to enter the creek opposite which we were moored, and which was now only just beginning to fill with water; but on the other side of the river, across only a mile of open water, was a haven of perfect safety. But, alas! when the ice had passed us, before we could get up sufficient steam, the river suddenly fell three feet, and left us aground by the stern, and immovable as a rock. Nor was it possible, with a current running up the river at the rate of four knots an hour, to swing the ship round so as to secure the rudder against any further attacks of the ice. Half a mile ahead of us, as we looked down the river, was the edge of the Yen-e-say′ ice. The river was rising again; but before the stern was afloat we discovered, to our dismay, that another large field of ice had broken up; and the Koo-ray′-i-ka was soon full of ice again. In the course of the night the whole of the ice on the Yen-e-say′, as far as we could see, broke up with a tremendous crash, and a dense mass of ice-floes, pack-ice, and icebergs backed up the Koo-ray′-i-ka, and with irresistible force drove the Koo-ray′-i-ka ice before it. When it reached the ship, we had but one alternative, to slip the anchor and let her drive with the ice. For about a mile we had an exciting ride, pitching and rolling as the floes of ice squeezed the ship, and tried to lift her bodily out of the water, or crawl up her sides like a snake. The rudder was soon broken to pieces, and finally carried away. Some of the sailors jumped onto the ice and scrambled ashore, whilst others began to throw overboard their goods and chattels. Away we went up the Koo-ray′-i-ka, the ice rolling and tumbling and squeezing alongside, huge lumps climbing one on the top of another, until we were finally jammed in a slight bay, along with a lot of pack-ice. Early in the morning the stream slackened, the river fell some five or six feet, and the ice stood still. The ship went through the terrible ordeal bravely. She made no water, and there was no evidence of injury beyond the loss of the rudder. In the evening the ship was lying amidst huge hummocks of ice, almost high and dry. The Koo-ray′-i-ka, and right across the Yen-e-say′, and southward as far as the eye could reach was one immense field of pack-ice, white, black, brown, blue, and green, piled in wild confusion as close as it could be jammed. Northwards the Yen-e-say′

was not yet broken up. All this time the weather was warm and foggy, with very little wind, and occasional slight rain. There was a perfect Babel of birds as an accompaniment to the crashing of the ice. Gulls, Geese, and Swans were flying about in all directions; and their wild cries vied with the still wilder screams of the Divers. Flocks of Redpoles and Shore-Larks, and Bramblings and Wagtails in pairs, arrived, and added to the interest of the scene. On the 2nd of June there was little or no movement in the ice until midnight, when an enormous pressure from above came on somewhat suddenly, and broke up the great field of ice to the north of the Koo-ray′-i-ka, but not to a sufficient extent to relieve the whole of the pressure. The water in the Koo-ray′-i-ka rose rapidly. The immense field of pack-ice began to move up stream at the rate of five or six knots an hour. The poor ship was knocked and bumped along the rocky shore, and a stream of water began to flow into the hold. At 9 o'clock all hands left her, and stood upon the snow on the bank, expecting her instant destruction. The stream rose and fell during the day; but the leak, which was apparently caused by the twisting of the stern-post, choked up. Late in the evening an opportunity occurred of a few hours' open water, during which steam was got up; and by the help of a couple of ropes ashore, the rudderless ship was steered into the little creek opposite to which she had wintered, and run ashore. Here the leak was afterwards repaired and a new rudder made. We calculated that about fifty thousand acres of ice passed the ship up stream during these two days; and we afterwards learned that most of this ice got away some miles up the Koo-ray′-i-ka, where the banks were low, and was lost in the forest.

The battle of the Yen-e-say′ raged for about a fortnight. The sun was generally burning hot in the daytime; but every night there was more or less frost. The ice came down the Yen-e-say′ at various speeds. Sometimes we could see gigantic masses of pack-ice, estimated at twenty to thirty feet in height, driven down the river at an incredible pace, not less than twenty miles an hour. In the Koo-ray′-i-ka the scene was constantly changing. The river alternately rose and fell. Many square miles of ice were marched up for some hours, and then marched back again. Sometimes the pack-ice and floes were jammed so tight together that it looked as if one might scramble across the river without difficulty. At other times there was a good deal of open water, and the icebergs "calved" as they went along with much commotion and splashing, that could be heard half a mile off. Underlayers of the iceberg ground; and after the velocity of the enormous mass has caused it to pass on, the pieces left behind rise to the surface, like a whale coming up to breathe. Some of these "calves" must come from a considerable depth. They rise up out of the water with a great splash, and rock about for some time before they settle down to their floating-level. At last the final march past of the beaten winter-forces in this great fourteen days' battle took place, and for seven days more the rag, tag, and bob-tail of the great arctic army came straggling down—worn and weather-beaten little icebergs, dirty ice-floes that looked like mud-banks floating down, and straggling pack-ice in the last stages of consumption. The total rise of the river was upwards of seventy feet.

The moment that the snow disappeared vegetation sprang up as if by magic, and the birds made preparations for breeding. Although I had taken the precaution of providing myself with a ship, the misfortunes of Capt. Wiggins delayed me on the arctic circle for some weeks. As we passed through Yen-e-saisk′ I bought a schooner of a ship-builder of the name of Boiling, a Heligolander. I christened it the 'Ibis;' and on the 29th of June we left the Koo-ray′-i-ka with this little craft in tow. Our progress down the river, however, was one catalogue of disasters, ending in our leaving the 'Thames' on the 9th of July a hopeless wreck, lying high and dry on a sand-bank, in lat. 67°. As we sailed northwards in the 'Ibis' the forests became smaller and smaller, and disappeared altogether about lat. 70°. The highest point we reached was lat. 71½°, where I sold the 'Ibis' to the captain of a Russian schooner, which had been totally wrecked during the break-up of the ice. The tundras of Northern Siberia are almost exactly like those of North Russia, and equally gay with brilliant flowers and ground-fruits of various kinds, swarming with birds, and alive with mosquitoes. During this voyage we had an excellent opportunity of making the acquaintance of many native tribes, the Ost′-yak, the Tun-goosk′, the Dol′-gahn, the Yu-rak′, and the Sam′-o-yade.

On the 23rd of July I left Gol-cheek′-a in the last Russian steamer up the river, and reached Yen-e-saisk′ on the 14th of August. After a few days' delay I drove across country to Tomsk, stopping a day or two in Kras-no-yarsk′. In Tomsk I found an excellent iron steamer, in which I sailed down the river Tom into the Ob, down which we steamed to its junction with the Eer′-tish, up which we proceeded until we entered the Tob-ol′, and afterwards steamed up the Too′-ra to Tyu-main′, a distance by water of 2200 miles. From Tyu-main′ I drove through Ekatereenburg across the Urals to Perm, where I took my passage on board the 'Sam-o-lot′,' or self-flyer, down the Kama, and up the Volga, to Nishni-Novgorod. In St. Petersburg I spent a week, and reached London on the 9th of October, bringing with me more than a thousand skins of birds, about five hundred eggs, and a cart-load of native costumes and other ethnological curiosities. I everywhere met with the greatest kindness and courtesy, and am very much indebted to friends, too numerous to mention, who assisted me in many ways during my adventurous journey of more than fifteen thousand miles.

The study of zoology is, I am afraid, more and more neglected in Russia; but there is still some amount of field-work going on. Taczanowski, the Curator of the Museum at Warsaw, still receives from Dr. Dybowsky ornithological collections from Lake Baical. Professor Strebelow, at Kras-no-yarsk′, is an accomplished entomologist, and would, I am sure, be glad to assist any European collector. Professor Szoffzoff, at Omsk, is an excellent entomologist, and has also a good knowledge of birds. The Kazan collection is in fair order; but few of the birds in the Museum possess localities or dates, and none of the Professors make ornithology a special branch of study. The Eversmann collection has been sold to the Museum at St. Petersburg for an old song. Sabanaeff, of Moscow, appears to have deserted ornithology altogether, and to be immersed in literary pursuits. The splendid collection of birds and eggs which he made in the Ural, and presented to the Museum of Moscow, lies neglected and in disorder, packed away indiscriminately in boxes, cupboards, and drawers; and many of them are without even a sheet of paper to keep out the dust, or to protect them from moths. I tried unsuccessfully to purchase this unique collection, to save it from destruction. In St. Petersburg, Von Schrenk has, for the time being, forsaken ornithology for the more popular charms of ethnography. The ornithological curator at the museum, Russow, is an enthusiastic field-ornithologist, and is rapidly bringing the chaos of birds in that establishment into excellent order, and will doubtless do good work in the future. St. Petersburg has also an excellent amateur ornithologist in Bogdanoff. At Dorpatt, Von Middendorff has retired, both from the University and from ornithology, to his ancestral estates, and is writing learned treatises on the breeding of horses and cattle. Prjevalsky is an excellent collector, but makes no pretensions to a scientific study of ornithology; and Severtzoff, though he has, as we all know, done good work, has followed too closely the steps of the elder Brehm to satisfy the requirements of modern scientific ornithologists, who aim at hitting the happy medium between "lumpers" and "splitters," but are nevertheless ofttimes sorely puzzled to know on which side of an incipient species to draw the line.

[To be continued.]

XIV.—*On the Members of the Genus* Gymnoglaux.

By George N. Lawrence.

Dr. Gundlach has kindly sent me a specimen of the Owl obtained by him in Porto Rico, which he described under the name of *Gymnoglaux krugii*. He writes to me that he now considers it to be "the veritable *Strix nudipes*, Daud."; and in this opinion I think he is correct. Comparing it with a specimen of the Owl from St. Thomas, which I named *G.*

newtoni, and which has been considered of late to be *G. nudipes*, Daud., I find them strikingly unlike, differing in appearance even more than the latter does from the Cuban species. Consequently the name *G. newtoni* must be restored for the bird from St. Croix and St. Thomas.

There being, in my opinion, three well-marked species of the genus *Gymnoglaux*, and having specimens of each, I think it may be of interest to have their characteristics defined.

1. GYMNOGLAUX NUDIPES (Daud.), Tr. d'Orn. ii. p. 199.

Gymnoglaux krugii, Gundl. Jour. f. Orn. 1874, p. 315.

Male. Upper plumage clear dark rufous, with a few small obscure pale markings on the upper part of the back; the scapulars are crossed with whitish bars, which are tinged with rufous and edged with black; front of a lighter rufous, crossed with waving lines of brown; lores and superciliaries of a pale rufous white; ruff dark brown at the bases of the feathers, their ends white; middle tail-feathers and outer webs of the others rufous brown, mottled with nearly obsolete darker markings; the outer webs of the outer feathers have a few irregular bars of pale rufous, the inner webs are dark brown; middle and larger wing-coverts blackish brown, ending with rufous, and having subterminal white spots on their outer webs; the quills on their outer webs are dull rufous brown, indented with white spots, the inner webs are dark hair-brown; the under plumage is whitish, closely marked on each feather with shaft-stripes of dark brown, and crossed on both webs with narrow waving lines of paler rufous brown; thighs and feathers of the tarsi for half their length light rufous, distinctly barred with blackish brown; bill whitish horn-colour; feet pale brownish yellow.

Hab. Porto Rico.

2. GYMNOGLAUX NEWTONI, Lawr. Ann. N.Y. Lyc. viii. p. 258.

Gymnoglaux nudipes, A. & E. Newton, Ibis, 1859, p. 64, pl. i.; Scl. et Salv. P. Z. S. 1868, p. 328.

Male? The plumage above (of my specimen from St. Thomas) is of a dull rufous, with narrow, irregular, rather indistinct markings of brown, and broader ones of pale rufous, the latter colour becoming whitish on the sides of the neck; front and superciliaries dull white; ruff and around the eyes dark reddish brown, the ruff tipped with a few white feathers; the scapulars are largely marked with white at their ends; middle tail-feathers and outer webs of the others dull rufous brown, with indistinct irregular bars of pale rufous; inner webs brown, barred with dull rufous white; the quills have their outer webs light brown, indented with whitish spots, the inner webs dark brown, crossed with nearly obsolete paler bars; the feathers of the throat are white at the base, barred at their ends with light rufous; the feathers of the breast are whitish, with shaft-stripes of dark reddish brown and waving cross bars of a lighter shade; the upper part of the abdomen and the sides are sparingly marked with the longitudinal stripes and cross bars, the middle of the abdomen dull white and immaculate; thighs and tarsi, for half their length, very pale rufous white, barred with narrow light brown markings; upper mandible dark horn-colour, except the culmen, which, with the under mandible, is yellowish; tarsus light brown.

Hab. St. Croix and St. Thomas.

3. GYMNOGLAUX LAWRENCII, Scl. et Salv. P. Z. S. 1868, p. 328, pl. 29.

Gymnoglaux nudipes, Lembeye, Gundlach, and others.

Male. The plumage above is dark brown, the back and wing-coverts distinctly spotted with white, the spots are largest on the scapulars and wing-coverts; tail brown, with a few dull white spots on the inner webs of the lateral feathers; primaries umber-brown, with rufous white marks on the outer webs; under plumage light greyish rufous; the feathers of the breast, upper part of the abdomen, and the sides are marked with longitudinal stripes of dark brown, and their ends narrowly edged with light brown; lower part of abdomen free from stripes; thighs brown, mottled with pale rufous; bill dark horn-colour, the culmen and end of under mandible yellowish: tarsi and toes yellow.

Hab. Cuba.

The features by which the species may be distinguished readily are given below:—

1. *G. nudipes.*—Dark brown above; all the feathers of the under surface striped and barred, giving to these parts a general dark appearance; front rufous; tarsi feathered for half their length, and of a rufous colour, with brown bands. Length 9½ inches, wing 6½, tail 3¾, tarsus 1½.

2. *G. newtoni.*—Above of a much lighter rufous than *G. nudipes*, and less densely striped and barred below; front white; the abdomen immaculate; tarsi feathered for half their length with whitish feathers tinged with rufous. Length 8 inches, wing 6¼, tail 3½, tarsus $1\frac{5}{16}$.

3. *G. lawrencii.*—Brown above, spotted with white; the shaft-stripes on the under plumage heavy, and the webs without the cross markings, but the ends of the feathers edged with light brown; lower part of abdomen without markings; front brown; tarsi bare of feathers. Length 7½ inches, wing 5⅞, tail 3¼, tarsus 1¼.

[Our knowledge of the species of the genus *Gymnoglaux* is so limited, and specimens are so scarce in collections, that we welcome any information tending to throw light upon the relationship of the species to one another. Still we cannot quite accept Mr. Lawrence's present solution of the question as to the number of species as final. When we proposed the name *G. lawrencii* (P. Z. S. 1868, p. 327) we took the opportunity of stating that a comparison of a specimen from St. Thomas with Daudin's type specimen of *G. nudipes*, from Puerto Rico, still extant in the Paris Museum, convinced us of their identity. The diversity of the colouring of the plumage in some species of Owls is so notorious, that it is very probable that greater variation in this respect may exist in *G. nudipes* than Mr. Lawrence gives it credit for possessing. If so, *G. newtoni* and *G. krugii* may both be *G. nudipes* after all. That Puerto Rico is inhabited by two species of *Gymnoglaux* we hesitate to believe; but should this prove to be the case, the name to be reinstated, according to our view, will be *G. krugii*, and not *G. newtoni*.—Edd.]

XV.—*Description of a new Species of Humming-bird, from Mr. Gould's Collection, belonging to the Genus* Iolæma. By D. G. Elliot, F.R.S.E. &c.

Iolæma luminosa, Gould, MS.

Top of head and nape dull dark green: chin and sides of the throat black: centre of throat most brilliant topaz, changing, according to the light, into a flame-colour or a brilliant emerald-green: back bronzy green, graduating into a rich purplish red upon the upper tail-coverts: breast, flanks, and abdomen brilliant metallic coppery red: wings dark purple: tail has the median rectrices bronze; lateral ones dark purple, tinged with green upon the outer webs: under tail-coverts reddish bronze, margined with white: bill black; feet brownish black. Total length $4\frac{1}{2}$ inches; wing $2\frac{3}{4}$; tail 2; bill, culmen $\frac{13}{16}$, at gape 1.

Hab. Unknown.

This bird was placed in my hands some three or four years ago by a dealer in Paris, and then seemed to me to represent a very distinct species, specimens of which I had never previously seen. The late Jules Verreaux, to whom I showed it, thought it the same as his *Heliotrypha barali*; but the type of the latter, having since come into my possession, proves to be a very different bird, belonging to quite another genus. At the time the present specimen was in my custody the owner was not willing to part with it; but he subsequently sent it to London, and it eventually passed into Mr. Gould's hands, who gave it the MS. name *luminosa*. He has now kindly allowed me to describe it. The specimen had been in the dealer's possession for a very long time, even when I first saw it, when it was amongst a lot of Bogota birds. On my asking if he knew where the specimen came from, he replied that he thought from Ecuador. The skin, however, is of the usual Bogota "make." It certainly is one of the very finest members of the genus to which it belongs, and words can but faintly describe the brilliancy of the metallic hues with which its plumage is adorned.

XVI.—*Notices of recent Ornithological Publications.*

16. *Milne-Edwards and Grandidier's 'Madagascar.'*

[Histoire Physique, Naturelle et Politique de Madagascar, publiée par Alfred Grandidier. Vol. xiii. Histoire Naturelle des Oiseaux par MM. Alph. Milne-Edwards et Alf. Grandidier. Tom. ii. Atlas.—1, 1re partie. 4to: Paris, 1876. Imprimerie Nationale.]

Of this extensive undertaking, which, when completed, will embrace no less than twenty-eight large 4to volumes, we have as yet only seen one of the livraisons relating to the Birds. This is the first part of the Atlas, containing seventy plates, coloured and uncoloured. While the osteological and anatomical plates are very good, we cannot say so much in favour of the coloured lithographs, which are stiff and unnatural. The portrait of *Eutriorchis astur* is an exception, being the production of Mr. Keulemans's talented pencil. They represent the following species:—

Coracopsis obscura, C. nigra.
Psittacula madagascariensis.
Haliaetus vociferoides.
Eutriorchis astur.
Falco zoniventris, F. concolor.
Tinnunculus newtoni.
Polyboroides radiatus.
Baza madagascariensis.
Buteo brachypterus.
Machæramphus andersoni.
Circus macrosceles, C. maillardi.
Astur hensti, A. francesi, A. morelii.
Accipiter madagascariensis.
Asio capensis major, A. madagascariensis.
Athene superciliaris.
Scops menadensis.
Coua serriana, C. reynaudii, C. cristata, C. pyropyga, C. verreauxi, C. cærulea, C. delalandii, C. gigas, C. ruficeps, C. olivaceiceps, C. cursor, C. coquereli.
Cuculus poliocephalus.
Centropus madagascariensis.

We hope soon to be able to report upon the letterpress of this important work.

17. *Howard Saunders's 'Birds of Southern Spain.'*

[Catalogue des Oiseaux du Midi de l'Espagne. Par Howard Saunders, F.L.S., F.Z.S. Bull. Soc. Zool. de France, 1877.]

We have received a separate copy of Mr. Howard Saunders's "Catalogue of the Birds of Southern Spain," of which the concluding portion is contained in the 'Bulletin' of the

Société Zoologique de France for last year. As the latest *résumé* of the birds of this interesting part of Southern Europe, and as being drawn up by an authority on the subject so well known for his labours on the avifauna of Spain as the author, this memoir will, we are sure, be much appreciated. The total number of species included by Mr. Howard Saunders in his list is 339. Of these, three only, we believe, are peculiar to the Spanish peninsula—namely, *Gecinus sharpii*, *Calendrella bætica*, and *Cyanopica cooki**. As special reference is made by the author to nomenclature, we may remind him that he will find on referring to his dictionary that the correct name of the Robin is *Erithacus* (not *Erythacus*) and that the Greek word *Aedon* cannot be properly abbreviated into *Ædon*.

18. *Brandt on Russian Zoological Works.*

[Brevis Enumeratio operum ad faunam mammalium et avium Imperii Rossici pertinentium; auctore Alexandro Brandtio.]

A very useful catalogue of works relating to the mammals and birds of Russia, which, as the author observes, were imperfectly stated in Sclater's address on zoological literature given before the British Association at Bristol†.

19. *Collett's Contributions to Norwegian Ornithology.*

[Mindre Meddelelser vedrörende Norges Fuglefauna i Aarene 1873–76. Af Robert Collett. Nyt Mag. Naturv. Kristiania, 1877, pp. 85–225.]

A series of notes on the birds of Norway, from the pen of a well-known and excellent observer accustomed to field-work.

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* In the new volume of his Catalogue (iii. p. 67) Mr. Sharpe uses *Cyanopolius* as the name for this genus, giving the date 1849. But if a reference is made to the Brit. Assoc. Report for that year (p. 75), as quoted, no such title will be found, the present species being there called simply *Pica cooki*. Mr. Sharpe has been misled by Bonaparte's quotation, P. Z. S. 1850, p. 86; but he should have recollected that Napoleonic assertions required to be verified!

† See Rep. Brit. Assoc. 1875, pt. ii. p. 85.

20. *Collett on New Norwegian Birds.*

[Om et Par for Norges Fauna nye Fuglearter. Af Robert Collett. Vid.-Selsk. Forh. Christiania, 1877.]

Mr. Collett introduces two new species to the Norwegian avifauna in this paper—*Motacilla melanope* of Pallas (killed near Bergen), and *Phylloscopus sibilatrix* (obtained near Laurvig.)

21. *Collett on two Collections from Madagascar.*

[Om et Par Fuglesamlinger fra Madagascar-Regionen, modtagne fra Aug. Lantz i 1867, og Missionslæge Borchgrevink i 1875. Af Robert Collett. Vid.-Selsk. Forh. Christiania, 1877.]

Gives an account of two small collections—one made by Capt. Aug. Lantz in Bourbon and Madagascar in 1867, and the other by Hr. Borchgrevink, a missionary, near Tamatave in 1875. Fifty-nine species are enumerated, and named after Dr. Hartlaub's 'Vögel Madagascars.' The prize in the two collections seems to have been a specimen of *Neodrepanis coruscans*.

22. *Oustalet on a new* Sibia.

[Description d'une espèce nouvelle du genre *Sibia* (*S. desgodinsi*) par M. E. Oustalet. Extrait du Bull. Soc. Philomat. de Paris, 7e sér. t. i. no. 3, 1877.]

Sibia desgodinsi is among a small collection of mammals and birds obtained by M. Desgodins at Yer-ka-lo, on the upper Mekong, in 29° 3′ 30″ N. lat. It is nearest to *S. gracilis* of Assam.

23. *Salvadori's 'Prodromus,'* Part iv.

[Prodromus Ornithologiæ Papuasiæ et Moluccarum, auctore Thoma Salvadorio. IV. Bucerotidæ, Meropidæ, Alcedinidæ, Coraciidæ, Podargidæ, Caprimulgidæ, Cypselidæ. Annali del Mus. Civ. de St. Nat. di Genova, vol. x. (1877) pp. 299–312].

One Hornbill, 38 Kingfishers, 4 Rollers, 9 Podargidæ, 4 Goatsuckers, and 3 Swifts are recognized as appertinent to the Papuan avifauna. *Tanysiptera obiensis,* from Obi (*Bernstein*), is described as new.

24. *Ernst on the Flora and Fauna of Venezuela.*

[Estudios sobre la Flora y Fauna de Venezuela por A. Ernst. 4to: Caracas, 1877.]

This series of memoirs of Dr. Ernst, of Caracas—so far as we know, the only representative of biological science in his adopted country—contains a nominal list of the birds of Venezuela, compiled principally from Sclater and Salvin's joint papers on the birds collected in that Republic by Hr. Goering and by Mr. Spence: 556 species are enumerated. Much revision is necessary before the list can be considered as accurate, species having been introduced on the authority of Burmeister's 'Thiere Brasiliens' and Gray's 'Hand-list.'

25. *Spence's 'Land of Bolivar.'*

[The Land of Bolivar, or War, Peace, and Adventure in the Republic of Venezuela. By James Mudie Spence, F.R.G.S. With Maps and Illustrations. 2 vols. 8vo. London: Sampson Low & Co. 1878.]

Mr. Spence's volumes contain much that is of interest to the naturalist concerning the varied and little-known Republic of Venezuela, which is so accessible from our shores, and yet attracts so few visitors. At the same time the greater part of the book is taken up by personal adventures, politics, and statistics. Mr. Spence reprints in his appendix the paper (published P. Z. S. 1873, p. 511) on the birds which he collected, and gives (vol. i. pp. 266, 267) woodcuts of the two new species, *Lochmias sororia** and *Crypturus cerviniventris*, which we owe to his exertions.

26. *Malm's 'Fauna of Gothenburg and Bohusland.'*

[Göteborgs och Bohusläns Fauna. Ryggradsdjuren; af A. W. Malm. 8vo: Göteborg, 1877].

This volume gives us an account of the vertebrated animals of the Swedish seaboard-provinces of Gotheborg and Bohuslen, from the pen of Dr. A. W. Malm. The birds occupy about 200 pages, and 229 species are included. We do not quite understand why Dr. Malm has thought it necessary to rename *Turdus merula* "*Merula linnei*," *Cinclus aquaticus* "*Cinclus linnei*," *Troglodytes europæus* "*Troglodytes linnei*," and so forth in every case where Linnæus's specific name has been subsequently used as a generic term. Some names, such as "*Phyllopsneustes*" and "*Tarrhaleus*," are obviously misspelt.

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* Specimens of this species have since been acquired by Salvin and Godman from Columbia and Bolivia; and there can be little doubt that the bird from Peru, described by Dr. Cabanis as *L. obscurata* (J. f. Orn. 1873, p. 65), belongs to the same species. The latter name has priority over the one given by us.—EDD..]

27. *Rowley's 'Ornithological Miscellany,'* Parts x. to xiii.

Since our last notice of Mr. Rowley's work, four parts have been issued. On home ornithology Mr. Rowley has penned articles on the following subjects:—on *Saxicola œnanthe*, illustrated with a plate, showing the form of trap employed on the South Downs for catching these birds; on Scoulton Mere and the Black-headed Gull (*Larus ridibundus*) (several plates show different views of this interesting mere); on Flamborough Head (also illustrated by four plates, of the cliffs and their inhabitants); on Sussex Heronries; and on *Cotyle riparia*. Mr. Rowley's contributions to exotic ornithology are also numerous. We have a continuation of the series of articles on the Birds of the Fiji Islands, with plates of *Myiolestes macrorhynchus*, Layard, and *Pachycephala torquata*, Layard. Figures are also given, accompanied by short accounts, of *Phainoptila melanoxantha*, Salv., *Odontophorus cinctus*, Salv., *Geotrygon costaricencis*, Lawr., *Chlorœnas subvinacea*, Lawr., *Geotrygon rufiventris* and *Leptoptila cassini*, Lawr., *Machærirhynchus nigripectus*, Schl., and *Domicella coccinea* (Lath.).

Mr. Rowley also continues his notes (or rather Dr. Meyer's) on the genus *Ptilopus*, and figures *P. miqueli* and *P. musschenbroeki*. He has also an article on the genus *Cittura*, and figures the females of *C. cyanotis* and *C. sanghirensis*. Here, too, Dr. Meyer has contributed much valuable information. We are also glad to see the conclusion of the translation of Col. Prejevalski's 'Birds of Mongolia,' instalments of which have appeared in each part for some time past. Of other contributions to Mr. Rowley's journal we have some notes by Mr. Sclater on the genus *Pionus,* with figures of *P. corallinus* and *P. tumultuosus* ; Mons. Boucard gives an account of *Pharomacrus costaricensis,* Mr. J. H. Gurney, Jun., notes on Flamborough Head; and Dr. Meyer describes two new species of birds from the Malay archipelago, viz. :—*Zeocephus rowleyi,* from the Sangi Islands, and *Surniculus musschenbroeki,* from Batchian.

28. *D. G. Elliot's Descriptions of new Species of Birds.*

[Ann. & Mag. Nat. Hist. ser. 5, vol. i. pp. 85, 98].

In the January number of the 'Annals' Mr. Elliot has two papers, describing as many new species of birds, from specimens in the Paris Museum. The first of these relates to a new *Anthracoceros,* from Cochin China, which he calls *A. fraterculus.* He recognizes four species of this genus, the diagnostic characters of which are given. In the second a new species of *Porphyrio,* called *P. edwardsi,* is characterized. It, too, is from Cochin China, its nearest ally being stated to be *P. poliocephalus* of India.

29. *Prof. Barboza du Bocage on West-African Birds.*

[Aves das possessões portuguezas d'Africa occidental. Por J. V. Barboza du Bocage, Decima quarta lista: Jorn. Scien. Math. Ph. e Nat. Lisb. xxii. pp. 142–150. Decima quinta lista: pp. 151–157. Mélanges Ornithologiques: pp. 158–161.]

These papers are in continuation of the series that Prof. Bocage has published from time to time, in which he has described the various collections received by him from the Portuguese possessions in West Africa, the greater part of them despatched by Senhor Anchieta from Angola. Amongst other matter we notice that under the head of *Bucorax cafer* Prof. Bocage draws attention to a supposed error of Mr. Elliot's in his determination of the figures of *Bucorax cafer* and *B. guineensis,* published in the Zoological Society's 'Proceedings' for 1873; and he further suggests that the species recently described by Mr. Elliot (*cf. anteà,* p. 113) as *B. pyrrhops* is the adult of *B. guineensis.* Of scarce species we observe amongst others *Stactolæma anchietæ,* four specimens of which are in the collection obtained in Caconda by the energetic collector whose name it bears.

The new species (all from Angola) in these collections are described, as follows:—*Hirundo nigrorufa,* allied to *H. dimidiata*; *Elminia albicauda*; *Drymœca angolensis*; *Sylvietta rufescens*; and *Parus rufiventris.*

30. *G. N. Lawrence on the Birds of Dominica.*

[A Provisional List of the Birds procured and noticed by Mr. Fred. A. Ober in the Island of Dominica. Forest and Stream, Dec. 6, 1877.]

In our last number (*anteà,* p. 103) we noticed a paper by Mr. Lawrence on the new species of birds obtained by Mr. Ober in the West-Indian island of Dominica, we now have a provisional list of 56 species obtained in the island up to the present time. When Mr. Ober's exploration of Dominica is concluded, we are promised a complete catalogue of its birds, in which will be incorporated the collector's notes. Besides the new species already noticed, there are several in this list we shall be glad to hear more about, especially those whose names are here simply given as new "varieties," such as *Vireosylvia calidris,* var. *dominicana,* and *Strix flammea,* var. *nigrescens.* Mr. Ober has not yet succeeded in obtaining specimens of all the birds he has heard of in the island. Besides the magnificent *Chrysotis augusta,* a second species of Parrot (no. 33) is said to be found, the determinution of which would be very interesting. The "Diablotin" (no. 56) will probably prove to be *Œstrelata hæsitata,* specimens of which, obtained by L'Herminier in the not distant island of Martinique, are now in the Paris Museum.

31. *M. A. Milne-Edwards on the Affinities of the Genus* Phodilus.

[Observations sur les Affinités Zoologiques du genre *Phodilus* par M. Alph. Milne-Edwards. Compt. Rend. Dec. 1877.]

The genus *Phodilus* has hitherto been placed by almost all ornithologists in the same group of Owls as *Strix,* to which genus it undoubtedly bears a great external resemblance. An examination of the skeleton negatives this view; and M.

Milne-Edwards proves that its real affinities are undoubtedly with *Syrnium,* in the Bubonine section of the family Strigidæ, and that its resemblance to *Strix* is quite superficial.

32. *M. A. Milne-Edwards on a new Genus of Owls from Madagascar.*

[Sur un nouveau genre d'oiseau de proie nocturne provenant de Madagascar. Par M. Alph. Milne-Edwards. Compt. Rend. Dec. 1877.]

The new genus here characterized by Prof. Milne-Edwards under the name of *Heliodilus* is shown by its osteological characters to belong to the Strigine section of the Owls, being related to *Strix,* but separable by characters pointed out in this paper. The species, procured at Tamatave, is also new, and is described in a footnote by M. A. Grandidier as *H. soumagnei,* after its discoverer.

33. *'Bulletin' of the Nuttall Ornithological Club.*

The January number of this journal contains several interesting papers, relating chiefly to the birds of the North-American continent.

Dr. Elliott Coues gives a note on *Passerculus bairdi* and *P. princeps,* the former of which is figured.

Mr. W. H. Henshaw has a paper on the genus *Passerella,* in which he shows that the four supposed species, *P. iliaca, P. townsendi, P. schistacea,* and *P. megarhyncha,* though easily distinguishable in specimens selected from the area of their maximum divergence, in reality pass insensibly into one another in intermediate localities.

Mr. W. A. Cooper gives notes on the breeding-habits of *Carpodacus purpureus,* var. *californicus,* with a description of its nest and eggs.

Mr. Ridgway describes a new Wren from the Tres Marias Islands. This bird is called *Thryothorus felix β. lawrencii,* its nearest ally being *T. felix* of the mainland of W. Mexico. From the form of nomenclature used for this bird, we conclude that Mr. Ridgway considers it a "variety" of *T. felix,* in other words, an imperfectly segregated species. Differential characters, however, are given, and no mention is made of intermediate links to connect it with *T. felix*. Moreover the bird has a distinct island habitat, which renders it very unlikely that intermediate forms exist. That it is "clearly derivative from the mainland species" does not preclude its being a distinct species, which we suspect it really is.

Mr. W. H. Henshaw returns to the discussion respecting *Selasphorus alleni*, and endeavours to show that he was right in bestowing a name upon the green-backed *Selasphorus*, using *S. rufus* (Gm.) for the well-known rufous-backed form. Mr. Elliot, holding the opposite view, has renamed the rufous-backed bird *S. henshawi*. The whole point turns upon Latham's description in the 'General Synopsis' (i. p. 785), as from it Gmelin framed his diagnosis. One of Latham's characters, "between the wings a greenish gloss," supports to some extent the view that he had the green-backed bird before him. This, however, is quite set aside a little further on when the *green back* of the female is compared with the *rufous back* of the male. Swainson's testimony (F. B.-Am. ii. p. 496) is entirely in favour of Latham's bird being the rufous-backed form. He describes a specimen in his own possession, which he bought from Bullock, who had it from Sir Joseph Banks, who probably received it from some one who accompanied Cook in his last voyage*. This specimen was doubtless a typical one. The peculiarity of the range of the two forms appears capable of being accounted for by viewing the northern rufous-backed bird to be a migratory species spending its summers in Western America north of California, and its winters in the Mexican highlands. On the other hand the Californian *S. alleni* is probably nearly sedentary, or, at all events, performs no such lengthened migration as its near ally. On the whole we think Mr. Henshaw right in his view of the question.

Mr. William Brewster has an article on the first plumage of a number of American birds; and he is followed by Mr. J. A. Allen, who criticises Mr. Wallace's 'Theory of Birds' Nests,' to show its inadequacy as applied to the birds of the

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* [I have searched for this specimen in the Swainson Collection at Cambridge, but have not succeeded in finding it.—O. S.]

North-American continent. Exceptions to a theory like Mr. Wallace's cannot but be numerous; and it would be unreasonable to expect otherwise. But we doubt much if the exceptions so preponderate as to leave no ground for believing in the existence of a substratum of truth in the suggestions Mr. Wallace has put forward to account for the peculiarities of the nidification of the many birds that certainly do conform to the generalizations he has laid down.

Amongst the "General Notes" (p. 37) Mr. Ridgway adds the three following Palæarctic birds to the North-American fauna—*Parus cinctus, Syrnium lapponicum,* and *Surnia ulula,* specimens of all of which were obtained at St. Michael's, Norton Sound, Alaska, by Mr. Lucien M. Turner, together with a considerable number of other skins.

34. *Godwin-Austen on new Birds from the Naga Hills and Assam.*

[Descriptions of supposed new Birds from the Naga Hills and Eastern Assam. By Lt.-Col. H. H. Godwin-Austen. Ann. & Mag. Nat. Hist. ser. 4, vol. xx. p. 519.]

The two new birds described in this paper are *Turdinus nagaënsis,* from the Eastern Naga hills, an ally of *T. garoënsis*; and *Staphidia plumbeiceps,* from Sadya, Eastern Assam, a close ally of *S. torqueola,* Swinh.

XVII.—*Letters, Announcements, &c.*

We have received the following letters, addressed to the Editors of 'The Ibis:'—

Gentlemen,—In the number of 'The Ibis' for April 1877, which has just reached me, there is a "Note on two Birds from the Fiji Islands," by Count Salvadori, in which he shows that my name for the little *Rhipidura* of those islands cannot stand, and he does me the honour to rename it after me. I thank him for his kindness, and am quite ready to accept his dictum in this case. As is well known to you, my wandering life has precluded my carrying about a library; and I am always ready to give way in matters of nomenclature.

With respect, however, to my statement that the coloration of the heads of *Lamprolia victoriæ* and *L. minor* (if that name has been retained) differs, I still adhere to my former opinion, at least so far as regards the specimens in my possession. I have before me three males (one in full breeding-plumage), three females, and one young male. In all, especially the breeding male, there is a distinct inverted-V-shaped patch of dull-coloured feathers inserted into the brilliant blue of the back of the head, which is entirely wanting in *L. minor*, of which I have a pair (male and female), given me in exchange by my friend Kleinschmidt. They are not well prepared, but well enough to show that the head is entirely covered all down the nuchal portion with iridescent blue feathers. I must admit one thing, however: on exposing my *L. victoriæ* to a strong slanting *sun*-light this morning, I can perceive sparkles of blue on the feathers of the Λ-shaped mark; but this my critical examination has shown me that the blue of the head of *L. minor* is much *coarser* than that of *L. victoriæ*. I observe also that the silvery white of the tail of the female of the former extends nearer the tip than it does in the male, in which I cannot (without having the means of very accurate measurement) see that more difference between it and *L. victoriæ* exists than is consistent with their relative sizes.

If Count Salvadori will hold *L. victoriæ* with its bill towards him, I think he will see the V-shaped mark to which I refer, with its apex pointing to him; in this position it is very distinct. I think, too, *abrasion* of the extreme tip of the tail may have something to do with the peculiarity noticed by him; at least such is the case in my specimen.

I am, &c.,

E. L. Layard.

P.S. Since writing the above, a Mr. Chamberlain, who has been collecting in Fiji, has been with me. On looking over my collection I pointed out the black Λ-shaped mark on the heads of *Lamprolia*, which he at once saw, but remarked what large birds mine were. He then picked up a specimen that had escaped my notice, and said, "All my birds of are this size." To our surprise we then saw all the head was blue, as in *L. minor*.

Sirs,—I should like to ask the authors of the 'Nomenclator Avium Neotropicalium' to see if *Euphonia chalcopasta*, described in that work (p. 157, November 30th, 1873), be not the same as my *Euphonia mesochrysa* (Atti R. Acc. Sc. Tor. viii. p. 193, January 1873). I am pretty well sure that such is the case: the descriptions agree; and the characteristic phrase, "affinis *E. chrysopastæ*, sed fronte flava diversa," applies also to *E. mesochrysa*, of which I have seen lately a second specimen, exactly like the type, labelled "Bogota."

T. Salvadori.

Turin, Zoological Museum,
December 10th, 1877.

[We have compared a specimen of *E. mesochrysa*, kindly forwarded by Prof. Salvadori, with the typical specimen of our *E. chalcopasta*. There can be no question that the species are identical.—Edd.]

Sirs,—At page 91, vol. ii. of the English edition of 'New Lands within the Arctic Circle,' Payer includes Ross's Gull (*Rhodostethia rosea*) amongst the birds found by the Austrian Expedition between Novaya Zemlya and Franz-Josef Land. Through the courtesy of Mr. Clements Markham, Secretary of the Royal Geographical Society, my request for additional information in reference to this very interesting statement was forwarded to Herr Julius Payer; and I have pleasure in giving a translation of the answer of that distinguished Arctic explorer:—

"The Rose-coloured Gull (*Rhodostethia rosea*) I shot myself in the summer of 1873. I remember well how this rare Gull threw all on board into astonishment. As we had no zoologists on board, the identification was made by the help of Fritsch's large and beautiful Atlas as soon as I got into the cabin. All the characters given by Fritsch for *Rh. rosea* were found in the bird we shot. . . . . The specimen belongs to Tegetthoff, whose present address I cannot give.

"Frankfort-on-Main,
22nd January, 1878."

I am in hopes that this notice will attract attention, and that the critical examination of the specimen alluded to will place beyond doubt the occurrence of Ross's Gull in the Novaya Zemlya Sea. How interesting it is thus to obtain, after a lapse of fifty years, corroborative evidence that Sir James Clark Ross was correct in determining this species as seen by him to the north of Spitsbergen, during Parry's memorable attempt to reach the North Pole!

Yours, &c.,
H. W. FEILDEN.

Aldershot,
2nd February, 1878.

SIRS,—I am anxious to put on record some additions to the birds of Ceylon that have recently come to light, and also to make some remarks upon some others.

SPIZAETUS NIPALENSIS (?)

Spizaetus nipalensis, Kelaart, Prodromus F. Zeylanicæ, Cat. p. 114; Layard, Ann. & Mag. N. H. ser. 2, vol. xii. p. 98; Holdsworth, P. Z. S. 1872, p. 411.

Having had occasion to examine a large series of *Spizaetus nipalensis* for the purpose of comparison with examples of the Mountain Hawk-Eagle of Ceylon, I find that certain characteristics, differing from those presented by the Ceylonese bird, are constant in the Indian form. I propose to point them out here with a view to establish a ground for separating the island bird as a distinct subspecies, at any rate. Before noticing these peculiarities, I may remark that fully adult birds from Nepaul are nearly always exceedingly dark on the head, and have the whole of the centre of the chin and gorge occupied by a very broad black stripe, having between it and the equally black cheeks a space narrower than itself. The coloration of the chest likewise is very dark, from youth to the adult stage; and more examples have a plain brown feather than one with undulations of white at the lateral margins. The distinctive character of the under surface, as compared with that of the Ceylonese form, consists in the white bars on the breast, flanks, and belly being, in all cases, more or less, *interrupted at the shaft* by the brown hue of the rest of the feather, which division varies from an exceedingly fine margin on each side of the *dark* shaft, to a broad space equal, even in adults, to about $\frac{3}{10}$ of an inch. The bars are, moreover, irregular, and in many instances do not exactly oppose one another, while in others they take the form of mere bar-like spots, not reaching to the shaft or margin of the web. The brown hue of the feather is uniform throughout, being no darker at the margin of the white band than elsewhere. In contradistinction to these features, the Ceylon bird is marked from the chest downwards with broad, *complete*, parallel-edged, white bands, with which the shaft is concolorous; in addition to which the brown portion of the feather is not uniform, but has a darker margin bordering the bands. The complete band exists in a young bird from Haputale in the Norwich Museum, although the only feathers which are barred at all are a few at the sides of the breast. The bars, in adults, are continued higher up the breast than in any Indian specimens I have seen; and the chest-feathers are very deeply indented with white at the margins, with the brown portions paler than those of the pectoral barred feathers. A further distinctive point in the Ceylonese bird is the large foot, with its gigantic claws, that of the inner toe being equal to the average hind claw in most Nepaul specimens.

I subjoin the following table of measurements, which may be of interest, and which is the result of an examination of a series of these Eagles in the British, India, and Norwich Museums, showing the relative size of wing and hind claw as compared with the same in the island race, which I propose to distinguish as Spizaetus kelaarti, after its discoverer in Ceylon. The list, it will be observed, includes an example from Japan, in the Norwich Museum, and which was referred to lately by Mr. Gurney in his article on the genus (Ibis, 1877, p. 431).

Locality.	Wing. in.	Hind claw, measured straight from base above to tip. in.	Museum.
a. Nepaul	18·3	1·65	Norwich.
b. Japan	19·5	1·93	"
c. Nepaul	20·0	1·90	"
d. "	19·3	1·80	India.
e. Bhootan	18·5	1·80	"
f. Nepaul	19·5	1·7	British.
g. "	19·0	1·8	"
h. "	18·5	1·8	"
i. "	17·9	1·65	"
j. ♀, Almorah	18·6	1·85	"
k. Nepaul	17·4	worn down.	"
l. "	19·0	1·90	"
m. India	18·8	1·77	"
n. juv., Almorah	17·2	1·65	"
o. juv., Nepaul	17·5	1·70	"
p. juv., "	17·5	1·55	"
q. "	18·0	1·70	"
a. Ceylon (Haputale)	20·0	2·10	Coll. S. Bligh.
b. " (Maturatta)	18·5	2·05	Coll. W. V. Legge.
c. juv., Ceylon (Haputale)	16·3	1·7	Norwich.

BUTALIS MUTTUI.

Butalis muttui, Layard, Ann. & Mag. N. H. ser. 2, vol. xiii. p. 127.

Alseonax terricolor, Holdsworth, P. Z. S. Cat. no. 122, p. 441; Legge, Str. Feath. vol. iii. 1875, p. 366.

On comparing the Ceylonese Rusty Flycatcher, several examples of which I possess, with specimens of *Alseonax ferrugineus* in the British Museum, I find that it is quite distinct from the latter bird; and as Mr. Sharpe informs me that it is not known at present from any other locality but Ceylon, it must be returned to the list of birds peculiar to the island, among which it was originally placed, when described by Layard. I cannot but think, however, that it has some other habitat besides Ceylon; for it appears to me to be migratory to that place, inasmuch as I have only observed it during the cool season—October to March*. Layard's description tallies very well with my specimens, which were procured in forest in the north and west of the island; but he makes no mention whatever of the very delicate *yellow* legs and feet, which are the chief characteristics of the bird; nor does he speak of the white spot on the lores, nor the conspicuously dark patch on the lower part of the face, contrasting with the rather narrowly confined white of the throat. Notwithstanding, the description, short as it is, comes too close to my birds to permit of my considering them as belonging to another species. *Alseonax ferrugineus* differs from the Ceylon bird in the much deeper rufous of the rump, upper tail-coverts, and margins of the wing-coverts, but more particularly in the rufescent hue of the lower parts, including the under tail-coverts, these being white in the insular form.

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* Layard, however, got his specimen in June at St. Pedro, which militates against my theory.

LOCUSTELLA CERTHIOLA, Pallas.

Locustella certhiola, Jerdon, B. of India, vol. ii. p. 159.

This Grasshopper-Warbler must be added to the Ceylonese avifauna. It is found in certain swamps of the western province, and was procured by me in February last year.

TRINGA PUGNAX.

The Ruff is another addition to our list, a young male having been shot last March by Capt. H. Wade, 57th Regt., near Kirinde, on the S.E. coast.

I am, yours &c.,
W. V. LEGGE.

March 4th, 1878.

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233 Beacon Street, Boston.
March 3rd, 1878.

SIRS,—The *Parula* recently obtained by Dr. Merrill on our southern frontier, and supposed by him to be only the commom *P. americana*, is not, in the opinion of Dr. Coues, *P. pitiayumi*, but a new species, for which he proposes the name of *P. nigrilora*.

Neocorys spraguei has been taken by Mr. Geo. B. Sennett near Galveston.

Besides these acquisitions, new to our fauna, Mr. Sennett and Dr. Merrill have taken a number of specimens of the Dove *Leptotila albifrons*, Bp. It was first shot by Mr. Sennett, near Edinburgh, sixty miles north of Fort Brown, and afterwards by Dr. Merrill at Fort Brown.

Myiarchus erythrocercus, Scl. & Salv. This species, also new to our fauna, has been taken by Dr. Merrill, who has also been so fortunate as to secure two sets of its eggs, one with five, the other with three examples. These, as might be supposed, are very similar in all their peculiarities to those of *M. crinitus*, *M. mexicanus*, and *M. cooperi*, most nearly approaching the latter in the size and number of its purplish brown markings. A full account of these will be given in Dr. Merrill's forthcoming 'List of the Birds of the Lower Rio Grande,' to be published by the Smithsonian Institution. He already has a list of 250 species that he has himself taken.

Dr. Merrill has also secured the birds, with their nest and eggs, of what Mr. Ridgway calls *Peucæa æstivalis*, variety *arizonæ*. I am not much impressed, generally, with this "variety" style; and in the present case I have no faith in it whatever. The set of eggs, taken with their parents, in this case are as widely different from well identified eggs of the genuine *P. æstivalis* as nearly spherical, decidedly blue eggs can be from pointedly oval crystalline white eggs. I therefore believe *P. arizonæ* to be a good species, and certainly not a variety of *P. æstivalis*. I believe it is not new to our fauna, though I am not sure. It has been taken in Sonora, Mexico, and attributed to Southern Arizona.

We had an interesting visitation during a violent snowstorm, which prevailed hereabouts several weeks ago, and which lasted forty-eight hours, accompanied by high winds. A trap set for *Plectrophanes nivalis* was found to contain a fine adult example of *Pyranga ludoviciana*, Bon. It was a wild bird; and its most eastern limit is the great Missouri plains, two thousand miles distant. Besides, on the 20th of January it is supposed that all these birds are in Mexico or Central America. How happened such a bird to reach us in midwinter? Can it be that the great storm, that had been some ten days in approaching us, caught this bird somewhere on the Mexican-Gulf coast in its vortex, and compelled its reluctant steps to our inhospitable shores? But I forbear, lest you remind me of the apothegm that any child can ask questions which the wise man cannot answer.

Yours &c.,
THOMAS M. BREWER.

March 20th, 1878.

SIRS,—It may be interesting to some of the readers of 'The Ibis' to hear that several live specimens of the fine rare *Ceriornis blythi* (the first known example of which was brought home by Dr. Jerdon in 1869) have this last cold season been obtained by Capt. Brydon, of the 44th Sylhet Light Infantry, who was sent up on an expedition against the Nagas of Mozemah, which is situated under the Burrail range. Lieut. R. C. Macgregor, of the same regiment, writes that he hoped to be the possessor of a pair in a day or two, but does not mention if a female had been brought in—a great desideratum; for it is not yet known to ornithologists. I have written to recommend that these birds be kept during the hot weather at Shillong, in the Khasi hills, the head quarters of the regiment, and thus well broken to confinement, before being sent home in the cold weather. I trust therefore we may again see living specimens in England, which may lead to their being established here.

Yours &c.,
H. H. GODWIN-AUSTEN, Lt.-Col.

London, March 24th, 1878.

SIRS,—In 'Stray Feathers,' vol. v. pp. 60, 117, Mr. A. O. Hume has called attention to the confusion that exists regarding the Hornbill included in my first list of birds from the north-east frontier of India (J. A. S. B. vol. xxxix. pt. 2, p. 91) under the title *Anorhinus galeritus*, Temm., and expresses a hope that I will look into the matter. This I have been unable to do until lately; but I think the question may now be clearly settled. In the preparation of this list I was much indebted to the kind assistance of Dr. T. C. Jerdon, who happened to be in the Khasi hills at the time the collection was being brought together; he took a very great interest in it, and encouraged me in my first attempts to gain a knowledge of the ornithology of the new country we were surveying. On returning from India in 1870, I made over to the British Museum all the Hornbills that I had collected in the Assam hills, and added to the above list the provisional name adopted for specimen No. 146*c*. These Hornbills having been separated from the rest of my collection, this specimen passed out of my sight after it was given over to Mr. G. R. Gray. I am now sorry to find that the original labels have been removed and new ones substituted, a system which must have destroyed the value of a large number of donations to the British Museum, but one, I am glad to say, which is no longer followed. In this instance, to make matters worse, I find Khasi hills converted into Kaisi, the correct habitat being the North Cachar hills, the two districts differing very considerably in their physical features.

I do not understand how Blyth fell into the error of considering the specimen 146*c* to be the "head in the possession of Lord Walden;" and what the head he referred to can be I do not know. He may have seen one at Chislehurst, where my collection remained a long time in Lord Tweeddale's care when I returned to India, and referred it to the bird I described, and which Jerdon, believing to be new, renamed. Lord Tweeddale has never seen the type of *A. austeni*; so that he was not in a position to make any remarks on what Blyth wrote in the list of Burmese birds; it is also evident that Blyth never saw the skin in the British Museum, which he would have identified with *Craniorrhinus corrugatus*. Further examination of this specimen, and comparison of the descriptions by Blyth of *A. tickelli*, and of my own from the living bird, have led me to the conclusion that it is only the young of the species the adult female of which will be found figured in 'The Ibis' for 1864. I must, however, remark that in this plate the coloration of the lower parts appears to me to be far too red a rufous; for in the description Blyth gives the colour as "ferruginous, rather pale, brightest on throat, dull and clouded with vinous ashy on belly."

We should also take the locality into consideration. Asalu is not by any means beyond the limits of range of *A. tickelli*, which follows the forest-clad range of mountains into Arakan and Burmah, migrating as certain fruits on which they feed come to perfection. Tickell mentions it as a rare bird in Tenasserim; and as they are generally found in the loftiest parts of the forest, they are most difficult to find, and very difficult to shoot. Mr. O. Limborg failed to secure a specimen when he was collecting there in 1877.

If my conclusions regarding this bird be correct, then the synonymy will be as follows:—

Anorhinus tickelli, Blyth, J. A. S. B. xxiv. pp. 266–285 (1855), xxviii. p. 412 (1859).

Toccus tickelli, Blyth; Tickell, Ibis, 1864, p. 173.

Anorhinus galeritus, Temm.; Austen, J. A. S. B. xxxix. p. 96 (1870).

Anorhinus austeni, Jerdon, Ibis, 1872, p. 6.

Craniorrhinus corrugatus, Temm.; Blyth, J. A. S. B. xliii. extra no. p. 69 (1875).

Referring the question of the head to Lord Tweeddale, he writes to me as follows:—"I remember the head perfectly. It was in one of your tin boxes, along with some of the larger birds. I think its name, whatever that name was, is written in pencil on the skull"*. This head has got somehow mislaid. I trust still to find it, and clear up what Blyth wrote about it. It has no relation whatever to No. 146*c*.

Yours &c.,
H. H. Godwin-Austen, Lt.-Col.

We record with regret the decease of Mr. Joachim John Monteiro, C.M.Z.S., at Lourevco Marques, Delagoa Bay. Although not a professed naturalist, Mr. Monteiro did much, during his eighteen years' residence in Angola, to make known, by observations and collections, the ornithology of that country. Several papers referring to his collections have been published in the Zoological Society's 'Proceedings.' In 1875 Mr. Monteiro published an interesting volume entitled 'Angola and the River Congo,' which gives some account of his adventures in those countries.

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* "Blyth saw the head when he came to Chislehurst with the MS. of his Burmese paper."

THE IBIS.

FOURTH SERIES.

No. VII. JULY 1878.

XVIII.—*A Catalogue of the Birds of Japan.*

By T. Blakiston and H. Pryer.

The compilers have examined and compared all the specimens of birds existing in the government museums at Tokio (Yedo)—namely, in the "Yamashita Hakuraukai" of the "Naimusho" (Home Department), in the "Kiyoiku Hakubutsukan" of the "Mombasho" (Education Department), and in the Museum of the "Kaitakushi" (Department for Agriculture)—as well as the collections of Mr. N. Fukusi in Yezo, Mr. Ota of Tokio, and Drs. Manning, Ahlburg, and Hilgendorf, and Mr. F. Ringer of Nagasaki. Mr. Ota's intimate knowledge of the birds of his own country has been of much assistance; and the Director of the "Hakuraukai," Mr. Tanaka, has kindly offered access to a collection of drawings by native artists. The 'Fauna Japonica,' Swinhoe's "Revised Catalogue of the Birds of China" (P. Z. S. 1871, pp. 337–423), Mr. Swinhoe's various contributions to 'The Ibis,' and Mr. Whitely's List (Ibis, 1867, pp. 193–211) have been carefully gone over. The arrangement adopted is that of Dr. Carl Claus in his 'Grundzüge der Zoologie.'

1. **Alca torda**, L.

Given in the list of the 'Fauna Japonica,' no figure.

2. Mormon cirrhatum (Gm.). "Etopirika."

A few specimens of this bird have been obtained from the Kuril Islands (Chijima) in summer by Mr. N. Fukusi.

3. Phaleris mystacea (Pall.). "Itorofu-umisusume."

This bird was obtained at the same locality and by the same gentleman as the preceding; the peculiar top-knot seems to have attracted the attention of the native ornithologists, as we find it figured in their works. Mr. H. Whitely obtained two specimens off the east coast (Ibis, 1867, p. 209); and Commodore Perry's Expedition procured examples at Shimoda and Tokio Bay (Cassin's Report).

4. Mergulus, sp. inc.

The Yamashita Hakuraukai, Tokio, have a dried specimen from Kaga; and in the Hakodate collection is one obtained in that harbour in May. Both specimens are wanting the white over the eye in *M. alle*; the former has white bristles under the eye and on the front, near the bill; the Hakodate specimen has a trace in the latter position. Length about 6½ inches, wings 3¾ to 4.

5. Brachyrhamphus umizusume, Temm.

Obtained at Hakodate in October. Specimens in U.S. National Museum from Tokio Bay and Shimoda, February and May (Cassin's Report Perry's Expedition). Mr. Cassin remarks that Temminck's name for this species is so "singularly barbarous and difficult to pronounce" that he adopts Prof. Brandt's more recent "*temmincki*;" but as this seems to possess no advantage over the older name, either on the score of euphony or pronunciation, the latter is therefore restored, having the right of priority.

6. Brachyrhamphus antiquus, Gm. "Umisusume."

Occasionally brought to the Yokohama game-market in winter. Common in Yezo from October to May. (Swinhoe, Ibis, 1874, p. 166.)

7. Brachyramphus kittlitzi, Brandt.

Specimens from Hakodate referred by Mr. Swinhoe to this species (Ibis, 1874, p. 166, et 1875, p. 458).

8. Uria carbo, Pall. "Keimafuri."

Not uncommon in the summer in Yezo (Swinhoe, Ibis, 1875, p. 458). Mr. H. Whitely included *U. grylle* in his list (Ibis, 1867, p. 210), probably in mistake for this species.

9. Uria troile, L. "Umigarasu."

One specimen, obtained at Hakodate in July, is referred to this species.

10. Uria brunnichi, Sab. "Ugamo."

Two obtained in winter in Yezo, and one in summer from the Kuril Islands, are referred to this species.

11. Ceratorhyncha monocerata, Pall. "Utou."

Very common in Yezo. (Swinhoe, Ibis, 1874, p. 166.)

12. Podiceps philippensis, Bonn. "Kaitsumuri."

Breeds about Yokohama. Common on ponds and moats of Tokio, also common in Yezo. (Swinhoe, Ibis, 1875, p. 456.)

13. Podiceps auritus, Lath. "Hajiro-kaitsumuri."

Common in Tokio Bay in winter, and in Yezo. (Swinhoe, Ibis, 1874, p. 163.)

14. Podiceps cornutus, Gm.

Collected at Hakodate (Swinhoe, Ibis, 1875, p. 456).

15. Podiceps cristatus, L.

Podiceps rubricollis major, F. J.?

Mr. H. Whitely gives this in his list (Ibis, 1867, p. 208). A single specimen in the Hakodate collection is referred to this species. This is probably the bird figured in the 'Fauna Japonica' as *P. rubricollis major*.

16. Colymbus adamsi, G. R. Gray. "O-hamu."

(Whitely, Ibis, 1867, p. 208; Swinhoe, Ibis, 1867, p. 146.) Common in the spring in Yezo.

17. Colymbus septentrionalis, L. "Abi."

Occasionally obtained in Tokio Bay, common in Yezo. (Swinhoe, Ibis, 1874, p. 163.)

18. Cygnus musicus, Bechst. "O-hakucho."

The common Swan of Yezo. (Swinhoe, Ibis, 1875, p. 456.)

19. Cygnus bewicki, Yarr. "Hakucho."

Many Swans are seen in the Shimosa lakes, probably of several species. A specimen in the Kiyoiku Hakubutsukan agrees with the figure and description of Bewick's Swan in Morris's 'British Birds.'

20. Anser segetum, Gm. "Hishikui."

There are two forms, a large and small, possibly separable. (Swinhoe, Ibis, 1875, p. 456.)

21. Anser brachyrhynchus, T. "Magan."

Common in winter in Tokio Bay, and collected in Yezo. (Swinhoe, Ibis, 1875, p. 456.)

22. Anser albifrons, Gm. "Karigane."

Also common in Tokio Bay; seen as early as the beginning of October. Passes Hakodate in spring and autumn. (Swinhoe, Ibis, 1875, p. 456, et 1877, p. 146.)

23. Anser erythropus, Linn.? "Ko-karigane."

Obtained in Tokio and Yezo. Specimens sent to Mr. Swinhoe, were identified as being the same as the foregoing, which may prove to be an error, owing to a wrong specimen having been forwarded.

24. Anser cygnoides, L. "Sakatsura-hishikui."

As in *A. segetum,* there are two sizes of this bird, which may prove to be distinct.

25. Anser hyperboreus, Pall. "Hakugan."

Arrives in large flocks in winter about Susaki, Tokio Bay. No specimens have yet been sent to Europe for identification.

26. Anser albatus, Cassin. "Ko-hakugan."

The smaller birds mixed with the flocks of *A. hyperboreus* may be of this species.

27. Bernicla leucoparia, Brandt. "Shijukaragan."

Only one obtained, at Hakodate; not much doubt about the species.

28. Bernicla torquata, Jenyns. "Kokugan."

Observed in the Yokohama game-market. The winter Sea-goose of Hakodate.

29. ANAS BOSCHAS, L. "Magamo."

Very abundant in Tokio in the moats in winter, but does not stop there to breed. Some breed in Yezo; but greater numbers go further north with other Ducks. Japan generally. (Swinhoe, Ibis, 1877, p. 146.)

30. ANAS ZONORHYNCHA, Swinh. "Karu-gamo."

Anas pœcilorhyncha, F. J.

Common in Yezo and Tokio. It breeds freely about Kawasaki and Susaki, Tokio Bay. A nest of eggs was found in April among water-plants on the lake at Uyino Park, Tokio. (Swinhoe, Ibis, 1874, p. 164.)

Yezo, Tokio, Yokohama.

31. AIX GALERICULATA (L.). "Oshidori."

Very common on small streams. It formerly built in the trees in Uyino Park, Tokio. Breeds in Yezo. (Swinhoe, Ibis, 1875, p. 457.)

Yezo, Oyama, Tokio.

32. CASARCA RUTILA (Pall.). "Higan."

This bird is figured in native books; we have been shown the wing-feathers; but no specimens yet obtained. Given in the 'Fauna-Japonica' list.

Tokio.

33. TADORNA CORNUTA (Gmel.). "Tsukushi-gamo."

This is also given in the 'Fauna-Japonica' list, and figured in native books.

34. MARECA PENELOPE (L.). "Hidori."

Swarms in the winter in the Tokio moats. Common in Yezo in spring and autumn. (Swinhoe, Ibis, 1875, p. 457.)

35. DAFILA ACUTA (L.). "Onaga-gamo."

A very common bird in winter in Tokio; passes Hakodate in spring and autumn. (Whitely, Ibis, 1867, p. 207.)

Yezo, Tokio, Yokohama. (Swinhoe, Ibis, 1877, p. 147.)

36. QUERQUEDULA CRECCA (L.). "Ko-gamo."

Very plentiful about Tokio in winter; some remain during winter in Yezo. (Whitely, Ibis, 1867, p. 207; Swinhoe, Ibis, 1877, p. 147.)

Yezo, Yokohama, Tokio.

37. QUERQUEDULA CIRCIA (L.). "Shima-haji."

One specimen, a beautiful male, obtained in the Tokio market by Mr. Ota.

Tokio.

38. QUERQUEDULA FALCATA (Pall.). "Yoshi-gamo."

Anas falcaria, F. J.

When this bird arrives about Tokio in October the male is without his beautiful plumes and gorgeous head, and resembles the female. (Swinhoe, Ibis, 1874, p. 164.)

Yezo, Tokio, and north coast of main island.

39. QUERQUEDULA FORMOSA (Georgi.). "Aji."

Very common in the winter about Tokio. Ranges as far as north extremity of the main island, if not Yezo.

Nonihou, Tokio. (Swinhoe, Ibis, 1877, p. 147.)

40. SPATULA CLYPEATA (L.). "Hashibiro-gamo."

This is also a common bird in winter, and looks very pretty, swimming in the Tokio moats. Migrates in Yezo. (Swinhoe, Ibis, 1875, p. 457.)

Yezo, Tokio.

41. CHAULELASMUS STREPERUS (L.). "Okayoshi."

A single specimen, obtained in the Yokohama game-market, unmistakably of this species, is in the Kiyoiku Hakubutsukan collection.

Yokohama.

42. FULIGULA MARILA (L.). "Nakihashiro-gamo."

Common in winter about Tokio; remains in spring at Hakodate about the latest Duck. (Swinhoe, Ibis, 1875, p. 457.)

Yezo, Tokio, Yokohama.

43. FULIGULA CRISTATA (L.). "Kinkurohajiro-gamo."

Anas fuligula, F. J.

Also a common Duck in winter at Tokio; migrates in Yezo. Full-plumaged specimens have not yet been sent for identification; but there is no doubt about the species.

Yezo, Tokio, Yokohama.

44. FULIGULA FERINA (L.). "Hoshihajiro."

Figured in native drawings; no specimens yet obtained.

45. Fuligula nyroca (Gm.). "Akahajiro."
Probably this species; a few specimens obtained in Tokio, Yokohama, and Yezo.

46. Fuligula mariloides, Vigors.
Obtained in Yezo. (Swinhoe, Ibis, 1877, p. 147.)

47. Clangula histrionica (L.). "Shinori-gamo."
A few specimens obtained at Yezo, Sendai (northern coast of main island), and Yokohama. (Swinhoe, Ibis, 1877, p. 147.)

48. Clangula glaucion (L.). "Hojiro-gamo."
Anas clangula, F. J.
Not uncommon, flying up and down rivers on the coast; also common in Hakodate harbour. (Whitely, Ibis, 1867, p. 208).
Yezo, Yokohama, Rokugogawa.

49. Harelda glacialis (L.). "Shima-aji."
Common on the coast of Yezo. (Whitely, Ibis, 1867, p. 208; Swinhoe, Ibis, 1877, p. 147.)
Yezo.

50. Somateria dispar (Sparrm.).
One specimen, obtained from Kamtchatka. Shot also on the Kuril Islands (Chijima) belonging to Japan.

51. Œdemia fusca (L.). "Kuro-tori."
Common in Yezo. (Swinhoe, Ibis, 1875, p. 457.)
Yezo, Sendai.

52. Œdemia americana (Rich.). "Kuro-gamo."
Obtained in Yezo, and also in the Yokohama game-market. Specimens not yet sent for comparison.
Yezo, Yokohama.

53. Mergellus albellus (L.). "Miko-aisa."
Mergus albellus, F. J.
Also obtained in Yezo and Yokohama game-market.
Yezo, Yokohama.

54. Mergus castor (L.). "Kawa-aisa."
Mergus merganser, F. J.

Common on rivers. (Swinhoe, Ibis, 1875, p. 456.)
Yezo, Rokugogawa.

55. Mergus serrator (L.). "Umi-aisa."
Common in Yezo. (Swinhoe, Ibis, 1875.)
Yezo.

56. Phalacrocorax carbo (L.). "U."
Carbo cormoranus, F. J.

Great numbers roost in some trees at Babasaka, in the centre of Tokio; they are seen flying over the city to their roosting-place in immense V-shaped lines, three, and even four hundred yards long. This species is also found far inland in Yamoto, on the mountain-streams, feeding on trout. Common on the coast of Yezo; a very large specimen obtained at Larushima (Perry Island), Tokio Bay, having the breast and belly pure white.

Yezo, Tokio, Yokohama, Yamato.

57. Phalacrocorax pelagicus, Pall. "U-garasu."

This bird keeps always on the sea, and is never seen inland. Great numbers rest at night on Treaty Point, Yokohama, during the winter, but do not stop the summer. Common on the coasts of Yezo. (Swinhoe, Ibis, 1874, p. 164, et 1877, p. 147.)

58. Phalacrocorax bicristatus, Pall.
Carbo bicristatus, F. J.
Figured in the 'Fauna Japonica.'

59. Sula leucogastra (Bodd.).
Sula fusca, F. J.
Given in the list in the 'Fauna Japonica.'

60. Sterna fuliginosa, Lath.
Figured in the 'Fauna Japonica.'

61. Sterna minuta, L. "Ajisashi."

A specimen, probably of this species, was obtained in Tokio Bay, shot with a rifle while sitting on a piece of floating wood, by Mr. A. Dare.

62. Sterna, sp. inc.

A wholly white Tern in the possession of the Yamashita Hakuraukai.

63. Sterna, sp. inc.

Specimens of a Tern, not yet identified, obtained at Hakodate, Kuril Islands, and Kamtchatka.

64. Larus crassirostris, Vieill. "Umineko."

Larus melanurus, F. J.

The most abundant Gull throughout Japan. (Blakiston, Ibis, 1862, p. 332; Swinhoe, Ibis, 1874, p. 164.)

Yezo, Japan generally.

65. Larus glaucus, L. "Shiro-kamome."

Hakodate. (Swinhoe, Ibis, 1874, p. 163.)

66. Larus glaucescens, Brandt. "O-washi-kamome."

Hakodate. (Swinhoe, Ibis, 1874, p. 163.)

67. Larus occidentalis, Aud.

Several specimens said to have been obtained by Mr. Whitely at Hakodate (Ibis, 1867, p. 210).

68. Larus niveus, Pall.

Hakodate. (Swinhoe, Ibis, 1874, p. 165.)

69. Larus marinus, L. "O-seguro-kamome."

Hakodate. (Swinhoe, Ibis, 1874, p. 165.)

70. Larus tridactylus, L. "Kamome."

One obtained in Yezo, and another at Tokio, probably of this species.

71. Chroicocephalus ridibundus (L.). "Uri-kamome."

One of the most abundant Gulls; leaves Yezo in winter, assumes black hood in April (Swinhoe, Ibis, 1874, p. 165).

Yezo, Tokio, Yokohama.

72. Diomedea derogata, Swinhoe. "Kuro-ahodori."

Common in Yezo at midsummer (Swinhoe, Ibis, 1874, p. 165).

Yezo.

73. Diomedea brachyura (Temm.). "Ahodori."

Common about Oshima; not so common in Yezo. The young (resembling *D. derogata*) is figured in the 'Fauna Japonica.'

Yezo, Oshima (*Vries*).

74. Fulmarus glacialis (Linn.). "Washi-kamome."

Specimens obtained from the Kuril Islands, probably this species, in Hakodate collection.

Kuril Islands.

75. Procellaria furcata, Gould.

A specimen, obtained from the Kuril Islands, in the Hakodate collection is referred to this species.

Kuril Islands.

76. Procellaria leucorrhoa, Vieill. "Umitsubame."

Specimens obtained from the Kuril Islands, not yet identified by comparison.

Kuril Islands.

77. Puffinus leucomelas, T. & S.

Figured in the 'Fauna Japonica.'

78. Puffinus tenuirostris, T. & S. "Umi-kamome."

A specimen obtained after a typhoon at Yoshino, Yamato, the nearest sea being forty miles distant. It had been struck down by a Hawk. It agrees sufficiently with the figure in the 'Fauna Japonica,' and is now in the Kiyoiku Hakubutsukan collection.

79. Charadrius fulvus, Gm. "Munaguro-shigi."

Charadrius pluvialis orientalis, F. J.

Common throughout Japan. *Virginicus* and *orientalis* are synonyms which this bird has received owing to the variable stages of plumage of the seasons. (Swinhoe, Ibis, 1874, p. 162, et 1875, p. 452.)

Yezo, Tokio, Yokohama.

80. Ægialitis cantiana (Lath.). "Shiro-chidori."

Common. (Blakiston, Ibis, 1862, p. 330; Swinhoe, Ibis, 1874, p. 162, et 1875, p. 452.)

81. Ægialitis dubia (Scop.).

Found breeding on the shores of Yamanaka Lake, Fujisan and Hakodate referred to this species by Swinhoe, Ibis, 1875, p. 452.

Yezo, Tokio, Fujisan, Yokohama.

82. Ægialitis placida, Gray. "Ikaru-chidori."

Common. (Swinhoe, Ibis, 1874, p. 162.)

Yezo.

83. Ægialitis ruficapilla (Temm) ? "Miashi-chidori."

Several specimens which require identification.

Yokohama.

84. Vanellus cristatus, Mey. "Tagiri."

Occasionally seen at Kawasaki, near Tokio, also obtained from Niigata, and one specimen from Hakodate (Swinhoe, Ibis, 1876, p. 334).

Tokio, Yokohama, Niigata, Hakodate.

85. Squatarola helvetica (L.).

Common in Yezo. (Swinhoe, Ibis, 1875, p. 452.)

86. Lobivanellus inornatus, T. & S. "Kiri."

Breeds at Susaki, Tokio Bay. The male is very vigilant, mounting up in the air and driving off any Kite or Hawk directly one appears hovering near where the hen is sitting, with loud laughing cries. The eggs are laid among the grass growing on the ridges which separate the paddy-fields; they are four in number, and resemble the common Plover's, but are not so pointed. Breeds in April. Not hitherto found so far north as Yezo.

Kawasaki, Tokio, Yokohama.

87. Strepsilas interpres (L.). "Kiojo-shigi."

Appears to be more common on the mainland of Japan than in Yezo. Specimens sent to Mr. Swinhoe in 1876.

Yezo, Yokohama.

88. Hæmatopus osculans, Swinhoe. "Miyako-dori."

A few specimens obtained in Yezo and about Yokohama; not yet sent for comparison.

89. TOTANUS INCANUS (Gm.).

Totanus pulverulentus, F. J.

Common. Spring- and autumn-plumaged specimens, both identified. (Swinhoe, Ibis, 1874, p. 163, et 1875, p. 453.)

Yezo.

90. TOTANUS GLOTTIS (L.). "Aoashi-chidori."

Common in Yezo, and obtained about Yokohama. This is probably the *Totanus brevipes* mentioned by Mr. Cassin (Proc. Acad. Phil. 1858).

91. TOTANUS FUSCUS (L.).

Common. (Blakiston, Ibis, 1862, p. 330.)

Yezo.

92. TOTANUS OCHROPUS (L.).

Common. (Blakiston, Ibis, 1862, p. 330.)

93. TOTANUS GLAREOLA (L.).

Common. (Swinhoe, Ibis, 1874, p. 163.)

Yezo.

94. TRINGOIDES HYPOLEUCUS (L.).

Common on rivers. A number of specimens in Hakodate collection, obtained from April to August; differences in plumage attributed to season only. (Swinhoe, Ibis, 1874, p. 163, et 1875, p. 453.)

95. LIMOSA UROPYGIALIS, Gould. "Kojaku-chidori."

Limosa rufa, F. J.

Tokio and Yezo. This is probably the species noted by Cassin from Japan, Proc. Phil. Ac. 1858. (Swinhoe, Ibis, 1875, p. 453.)

Yezo, Yokohama.

96. LIMOSA BREVIPES, G. R. Gray. "Sorihasi-chidori."

Obtained near Yezo and Tokio; a specimen in the Hakuraukai is very dark. (Swinhoe, Ibis, 1875, p. 453.)

97. RECURVIROSTRA AVOCETTA, L.

Limosa recurvirostra, F. J.

Mr. G. Hamilton states that he saw this bird some years ago at Susaki, Tokio. It is also given in the list of the 'Fauna Japonica.'

98. Tringa tenuirostris, Horsf.

A single specimen obtained at Hakodate in 1861 (Blakiston, Ibis, 1862, p. 330). Probably this is the species included by Cassin, Proc. Acad. Phil. 1858.

99. Tringa cinclus, Linn.

Tringa variabilis, F. J.

A number of specimens from Yezo, also from neighbourhood of Tokio, having the usual variability of plumage and length of bill. (Blakiston, Ibis, 1862, p. 330; Swinhoe, Ibis, 1875, p. 455.)

100. Tringa acuminata, Horsf.

Specimens as yet only from Yezo. (Swinhoe, Ibis, 1875, p. 455.)

101. Tringa albescens, Gould.

Yezo. (Blakiston, Ibis, 1862, p. 330, as *T. temmincki*; Whitely, Ibis, 1867, p. 206, as *T. minuta*; Swinhoe, Ibis, 1875, p. 455.)

102. Tringa damacensis, Horsf.

Yezo, and also from Kamtchatka. (Swinhoe, Ibis, 1875, p. 455.)

103. Tringa maculata, Vieill.?

Yezo. (Swinhoe, Ibis, 1875, p. 455.)

104. Calidris arenaria (L.).

South-east coast of Yezo. (Swinhoe, Ibis, 1875, p. 454.)

105. Machetes pugnax (L.).

A male specimen obtained in Yezo is referred to this species.

106. Lobipes hyperboreus (L.).

Specimens, in both spring and autumn plumage, from Yezo. (Swinhoe, Ibis, 1875, p. 455.)

107. Eurinorhynchus pygmæus (L.). "Hera-shigi."

A few specimens obtained in Yezo. (Swinhoe, Ibis, 1875, p. 455.)

108. Scolopax rusticola, L. "Hodo-shigi."

Common in winter at Tokio and South Japan. A beautiful variety, all creamy white, obtained at Kawasaki by an Italian gentleman, is now in the collection of the Milan Museum, and another, bought in the Yokohama game-market, of a light brown colour. Migrates to Yezo in spring. (Whitely, Ibis, 1867, p. 206.)

109. Gallinago australis (Lath.). "Yama-shiga."
This bird, obtained on Fujisan, in June and July, is abundant in Yezo, not yet found about Tokio. (Blakiston, Ibis, 1863, p. 100; Swinhoe, 1863, p. 444, et 1874, p. 163.)

110. Gallinago scolopacina, Bp. "Ji-shigi.
Common throughout Japan. Mr. Swinhoe believes he found *Gallinago wilsoni* among specimens sent him from Hakodate (Ibis, 1875, p. 454); but it was probably only *G. scolopacina* in autumn plumage.

111. Gallinago gallinula (L.).
Mr. Whitely mentions having obtained a specimen at Hakodate (Ibis, 1867, p. 206). He also includes *G. media*, Leach; this is probably *G. scolopacina*, Bp.

112. Gallinago solitaria, Hodgs. (Swinhoe, Ibis, 1877, p. 146.)
Common at Yokohama, often flushed on uplands. Rare in Yezo.

113. Pseudoscolopax semipalmatus, Jerdon.
One specimen, obtained in Yezo, referred, pending more specimens, to this species. (Swinhoe, Ibis, 1875, p. 454.)

114. Numenius major, T. & S. "O-shakushigi."
Hakodate specimens agree with the figure in the 'Fauna Japonica.' (Swinhoe, Ibis, 1876, p. 334; Whitely, Ibis, 1867, p. 205.)

115. Numenius minor, T. & S. "Shaku-shigi."
Figured in the 'Fauna Japonica.'

116. Numenius australis, Gould.
Common in Yezo. (Swinhoe, Ibis, 1876, p. 334, et 1863, p. 445.)

117. Numenius phæopus (Lath.). "Ko-shaku-shigi."

Not uncommon. This is the *N. tahitiensis* of Perry's Expedition. (Swinhoe, Ibis, 1877, p. 146.)

Yezo, Tokio, Yokohama.

118. Ibis nippon, T. & S. "Toki."

Common on the flats around the head of Tokio Bay. Breeds in Yezo. (Swinhoe, Ibis, 1875, p. 455.)

119. Ibis propinqua, Swinh. "Kuro-toki."

Not uncommon about Omou, Tokio. No specimen yet sent for comparison.

120. Platalea major, T. & S. "Hera-sagi."

Rather scarce. (Whitely, Ibis, 1867, p. 204.)

Hakodadi, Tokio.

121. Platalea minor, T. & S. "Ho-hera-sagi."

Figured in the 'Fauna Japonica.'

122. Nycticorax griseus (Linn.). "Seguro-goi" (Young Goisagi).

Ardea nycticorax, F. J.

Generally distributed in South Japan. Eggs and young obtained from a Heronry below Kotchi Castle, Tosa, in July. Nest placed on the highest branches of tall trees. No specimens from Yezo. (Swinhoe, Ibis, 1877, p. 147.)

Tokio, Yokohama, Yamato, Tosa.

123. Goisachius melanolophus (Raffles). "Miso-goi."

Ardea goisagi, F. J.

One specimen, obtained from Yokoska, Tokio Bay.

124. Botaurus stellaris (L.). "Sankanogoi."

Observed about Tokio. Common in Yezo. (Swinhoe, Ibis, 1875, p. 455.)

125. Ardetta eurhythma, Swinh. "Yoshi-goi."

Specimens obtained in Yezo. (Swinhoe, Ibis, 1876, p. 335.)

126. Ardetta, sp. inc.

Specimens obtained in Yezo—perhaps *Ardea scapularis* of the 'Fauna-Japonica' list.

127. Ardea cinerea, L. "Ao-sagi."

Occasionally seen about Tokio; specimens obtained in Yezo. (Swinhoe, Ibis, 1876, p. 335.)

128. Egretta modesta, Gray. "O-sagi."
Ardea alba, F. J.
Arrives at Tokio in April; common. Specimens from Yezo. (Swinhoe, Ibis, 1876, p. 335.)

129. Egretta intermedia, Hasselq. "Chiu-sagi."
Ardea egrettoides, F. J.
Specimens agree with *A. egrettoides*, figured in the 'Fauna Japonica.'
Yezo.

130. Egretta garzetta (Linn.)? "Shirasagi."
Ardea garzetta, F. J.?
A very common bird in South Japan; one specimen obtained in Yezo. Breeds in company with *Nycticorax griseus*.
Tokio, Yokohama, Shikoku.

131. Egretta russata, Wagl. "Ama-sagi."
Seems to be rather abundant in the south; not yet obtained in Yezo.

132. Ciconia boyciana, Swinh. "Ko-tsuro."
Occasionally obtained about Tokio, and is to be seen sailing on its immense spread of wings over the Susaki flats.
Tokio.

133. Grus cinerea, Linn.
Grus cinerea longirostris, T. & S.
Figured in the 'Fauna Japonica.'

134. Grus leucogeranus, Pall.
Also figured in the 'Fauna Japonica.'

135. Grus leucauchen, T. "Tancho."
The national Crane of Japan. This beautiful bird used to be rather common, but, now that it is permitted to become the prey of any one, has been almost exterminated. It was formerly allowed to be hawked, with great ceremony, only by nobles of the highest rank. This is the Crane so commonly figured in native drawings, and is much and deservedly admired. It is a bird of passage.

136. Grus monachus, T. "Nabetsuru."

Not uncommon.

Tokio.

137. Grus, sp. inc. "Mana-tsuru."

This is the most abundant Crane, and is a choice game-bird with the natives. Body lead-colour; neck white, extending down to between the shoulders; length about 50 inches, wing 23; legs red; wing-plumes white*.

Tokio, Toriyama, Yezo.

138. Rhynchæa bengalensis (L.). "Tama-shigi."

Rhynchæa maderaspatana, F. J.

Breeds on Fujisan; nest made of a few water-plants scraped together. Eggs of a dark olive-brown, blotched with black, and resemble the Snipe's. Not found in Yezo. (Swinhoe, Ibis, 1877, p. 146.)

Fujisan, Tokio, Yokohama.

139. Rallus indicus, Blyth. "Kuina."

Rallus aquaticus, F. J.

A very common bird on banks of streams and ponds. Migratory in Yezo. Breeds about Yokohama. (Swinhoe, Ibis, 1874, p. 163.)

Yezo, Tokio, Yokohama, Oyama in Legami.

140. Porzana pygmæa, Naum. "Himi-kuina."

One specimen, obtained in Yezo; not compared.

141. Porzana erythrothorax, T. & S. "Hi-kuina."

Common both on the main island and Yezo. (Blakiston, Ibis, 1862, p. 331; Swinhoe, Ibis, 1874, p. 163.)

142. Porzana exquisita, Swinh. "Shima-kuina."

Yezo. (Swinhoe, Ibis, 1876, p. 335.)

143. Gallinula chloropus, L. "Ban."

Rather common about Tokio, and also in Yezo. Specimens compared with European examples.

Yezo, Tokio, Yokohama.

144. Fulica atra, L. "O-ban."

Common on the large rivers north of Tokio.

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* [Is not this *Grus monachus*?—Edd.]

145. Otis tarda, L. "Nogan."

A specimen weighing 13½ lb. is reported to have been killed near Hiogo in December 1876. It is well known to the Japanese. The native ornithologists class it with the Geese.

146. Phasianus versicolor, Vieill. "Kiji."

General throughout Japan as far north as the straits separating the main island from Yezo. To be seen wild in the heart of Tokio. Neither this nor the following species are found in Yezo. It readily interbreeds with the Chinese *P. torquatus*, the hybrid being a remarkably fine bird, and its plumage in the male surpassing in beauty that of either of its parents. A female in male plumage was obtained by Mr. Dare in November 1877.

Tokio, Yohohama, Oyama, Fujisan, Yamato, Nambu.

147. Phasianus sœmmerringi, T. "Yamadori."

Some specimens are much darker than others. It frequents the plains and the highest parts of the mountains indifferently. The natives have succeeded in breeding in captivity hybrids of this and the preceding species. Of the pair which we have seen, the female is very large, the male small but of the most gorgeous plumage, defying description. In both the tail of *P. versicolor* is present; and the hen, except for her size, has little to distinguish her from that species.

Tokio, Yokohama, Oyama, Fujisan, Yamato.

148. Tetrastes bonasia (L.). "Yezo-raicho."

This has not yet been obtained on the main island. It is known in Yezo as the "Yamadori," which name properly belongs to *P. sœmmerringi*.

149. Lagopus mutus, Gould. "Raicho."

Some specimens from Kaga are in the collection of the Yamashita Hakuraukai; it is also said to be found in Ota-kisan, on the borders of Shinshin.

150. Coturnix japonica, T. & S. "Udzura."

Breeds on the shores of Yamanaka Lake, Fujisan. Occasionally winters in Yezo; is common there during summer. (Swinhoe, Ibis, 1875, p. 452, 1877, p. 145.)

Yezo, Tokio, Yohohama, Fujisan, Oyama.

151. Columba livia, Temm. "Kawara-bato."

A blue Rock-Pigeon which breeds in the famous cave of Bentensama, on the island of Enoshima, may be of this species.

152. Turtur gelastes, Temm. "Kiji-bato."

Stops all the year round on the plains, but is most abundant in winter; in Yezo in summer. Breeds in the vicinity of Yokohama in November—Mr. J. Dare having found a nest containing two eggs on the 4th November, and Mr. G. H. Olmsted another nest containing two fully fledged young on the 25th November. On the 12th October, 1876, a Dove, probably of this species, was frightened from its nest in a high tree on a mountain near Obata, Yamato, although the temperature at night was not above 40° F. at the time. (Swinhoe, Ibis, 1874, p. 162.)

Yezo, Tokio, Yokohama.

153. Turtur risorius (L.). "Shirako-bato."

Arrives about Tokio in April, often brought alive to market in large quantities. Light fawn-coloured varieties are found, probably domestic. Not yet procured in Yezo. (Swinhoe, Ibis, 1876, p. 334.) Breeds very late; young birds obtained in the Yokohama game-market in November.

154. Treron sieboldi, Temm. "Ao-bato."

This bird has a long and varied coo; and although it is otherwise seldom seen, it can easily be attracted within shot by a skilful native hunter imitating it with his call; but the slightest mistake alarms the bird. In Yezo in summer, particularly near the sea-shore. (Swinhoe, Ibis, 1875, p. 452.) This also is a late-breeding bird; two very young birds were obtained in Yokohama game-market in December.

155. Cuculus canorus, L. "Kako."

Common on Fujisan, but very wary and difficult to obtain. Note and habits same as the European bird.

Fujisan, Kintokisan.

156. Cuculus, sp. inc. "Hototogisu."

Common on Fujisan and in Tokio. Much hunted for the sake of its supposed medicinal qualities—a paste made of the burnt feathers being used as a salve for cuts and wounds, and the bird, roasted whole or reduced to charcoal, eaten for sore eyes and other disorders. The bird is mentioned by Kämpfer in his 'History of Japan' under the name of Fototenis (vol. i. p. 130). Its praises are frequently sung in Japanese poetry; and it is looked upon as the harbinger of spring. It derives its native name from its cry resembling the syllables *ho-to-to-ki-su.*

Tokio, Kanagawa, Fujisan.

157. CUCULUS, sp. inc. "Juichi."

Not so common as the two former Cuckoos; but it fully makes up for this by extra vociferousness and activity. The male is fond of perching upon the summit of a tree, spreading its wings and elevating its tail, and repeating the syllables *iiu ichi,* at first slowly, and then gradually faster and faster, until it cannot articulate any longer. It then tumbles off its perch, apparently exhausted, and flies to another tree and repeats the performance. It is about the size of *C. canorus*; rufous underparts striped longitudinally; back of neck has a whitish collar; tail barred with black; probably *C. sparverioides,* Vigors.

Fujisan, Nikko, Yezo.

158. CUCULUS, sp. inc. "Tsutsudori."

This seems to be the most uncommon of the four Cuckoos found on Fujisan; its note can be heard for a long distance, and resembles the slow tolling of a bell twice in succession and then a pause. Mr. Fukusi obtained a *Cuculus* with a black throat, which is probably the "Tsutsudori."

Fujisan, Kanagawa.

159. PICUS MAJOR, L. "Akagera."

Builds on Fujisan, and is the most abundant of the Woodpeckers everywhere. The Kaitakushi possesses a specimen from Yezo which may prove to be *P. minor,* but is in too bad condition for identification.

Tokio, Yokohama, Fujisan, Yezo.

160. PICUS LEUCONOTUS, Bechst. "O-aka-gera."

This fine bird is common on a tract of burnt forest on Onuinsan, in Yomato, where seven or eight may sometimes be seen at one time. Yezo specimens identified. (Blakiston, Ibis, 1862, p. 325; Swinhoe, Ibis, 1875, p. 451.)

Yamato, Yezo.

161. PICUS KISUKI, T. & S. "Ko-gera."

Breeds on Fujisan, and to be seen in Uyeno Park, Tokio. Yezo specimens identified. (Blakiston, Ibis, 1862, p. 325; Swinhoe, 1875, p. 451.)

Yezo, Tokio, Oyama, Fujisan, Yamato.

162. DRYOCOPUS MARTIUS (L.). "Kuma-gera."

Common in Yezo. (Blakiston, Ibis, 1862, p. 325; Swinhoe, Ibis, 1875, p. 451.)

163. GECINUS CANUS (Gm.). "Yama-gera."

Apparently confined to Yezo. (Blakiston, Ibis, 1862, p. 325; Swinhoe, Ibis, 1875, p. 451.)

164. GECINUS AWOKERA, T. & S. "Ao-gera."

Takes the place of the preceding in the south. Common on Ominisan, in Yamato.

Yamato, Oyama.

165. YUNX JAPONICA, Bp. "Arisu."

Yunx torquilla, F. J.

Two obtained in Yezo. (Swinhoe, Ibis, 1874, p. 162.)

166. ALCEDO BENGALENSIS, Gm. "Sawaseme."

Varies somewhat in size and colour. Breeds near Yokohama, Tokio, and in Yezo. (Blakiston, Ibis, 1862, p. 325; Swinhoe, Ibis, 1874, p. 152.)

Tokio, Yamato, Fujisan, Kadzusa, Yezo.

167. CERYLE GUTTATA, Vigors. "Kahancho."

Ceryle lugubris, F. J.

Frequents lonely mountain-streams, generally in pairs, both on the main island and in Yezo. (Swinhoe, Ibis, 1875, p. 449.)

Kintokisan, Miyakashi, Yezo.

168. Halcyon coromandeliana (Scop.). "Kiororo."
Halcyon coromanda major, F. J.

Very vociferous in rainy weather, when its mournful cry, *kyororo,* can be heard for a long distance. A few found in Yezo in summer. By some mistake, Mr. Swinhoe states (Ibis, 1876, p. 331), "*No* specimen sent." A specimen *was* sent, and is doubtless of this species, not *C. rudis*, as stated by Mr. Swinhoe.

Yezo, Fujisan, Kishiu, Yamato.

169. Upupa epops, L.? "Yatsugashira."

One specimen, obtained off the south-east coast of Yezo, is in the Hakodate collection.

170. Zosterops japonica, T. & S. "Mejiro."

Common in winter on the plains, associating with flocks of Tits. It is a favourite cage-bird with the natives. Specimens in the Hakodate collection taken there this spring.

Yezo, Yokohama, Fujisan, Yamato.

171. Certhia familiaris, L. "Kibashiri."

Specimens from Yezo are larger and lighter than those from the south. (Swinhoe, Ibis, 1874, p. 152.)

Yezo, Yamato.

172. Hirundo gutturalis, Scop. "Tsubakuro."
Hirundo rustica, F. J.

Arrives at Tokio about 1st April, and departs in November. Builds an open nest, invariably in houses, where a shelf is placed against a beam for its accommodation, out of reach of cats and rats; sometimes a piece of wood is suspended by a rope from the roof, on which the birds build their nests; this is removed in the autumn, after they have finished rearing their young, and again hung up the following spring; the presence of this Swallow is looked upon as an omen of good fortune. It may often be seen flying in and out of the rich merchants' houses in the busiest parts of the large cities. Eggs five or six, long, white, speckled with red. The common Swallow of Yezo. (Swinhoe, Ibis, 1874, p. 151.)

Everywhere on the main island and Yezo.

173. CECROPIS JAPONICA, T. & S. "Yama-tsubakuro."
Hirundo alpestris japonica, F. J.

Builds a bottle-shaped nest a foot long under the eaves of of the castle-towers and other old buildings in Tokio, but never visits Yokohama. Eggs six, white. Not hitherto found in Yezo.

Tokio, Shikoku, Yamato, Kobe.

174. COTYLE RIPARIA (L.). "Tsuna-muguri-tsubame."

Specimens, supposed to be of this species, obtained in Yezo by Mr. Fukusi.

175. CHELIDON BLAKISTONI, Swinh.

A closed nest found, built against a rock on the highest part of Onimisanjosan, Yamato, elevation about 7000 feet, in August, containing five addled white eggs, is supposed to belong to this species. The birds were flying about it; but none could be obtained, as no guns are allowed on this sacred mountain. Breeds in caves on the sea-shore of Hakodate Head. (Swinhoe, Ibis, 1874, p. 151.)

Yezo.

176. CYPSELUS PACIFICUS (Lath.). "Nairi-tsubame."

Seen in the neighbourhood of Yokohama and Tokio in May and October. Breeds in Fujisan among lava blocks. Not so common in Yezo as the following species. Specimens not yet compared. (Cf. Ibis, 1876, p. 331.)

Fujisan, Yokohama, Tokio, Yamato, Osaka, and Yezo.

177. CHÆTURA CAUDACUTA (Lath.). "Ama-tsubame."

This bird is said to be found in the Nikko Mountains. Common in Yezo in summer. (Swinhoe, Ibis, 1875, p. 448.)

178. CAPRIMULGUS JOTAKA, T. & S. "Yotaka."

Breeds in Fujisan. Seen near Yokohama in May and October, in summer in Yezo. (Swinhoe, Ibis, 1876, p. 331.)

Yokohama, Tokio, Fujisan, and Yezo.

179. CORVUS JAPONENSIS, Bp. "Hashibuto-Garasu."
Corvus macrorhynchus, F. J.

Swarms in Tokio. Very tame on Oshima. Wholly white and brown varieties obtained. The common Crow of Yezo. (Blakiston, Ibis, 1862, p. 325.)

Tokio, Yokohama, Oshima, Sarushima, Yezo.

180. Corvus corone, L. "Hashiboso-garasu."

Common. Breeds about Yokohama and in Yezo. (Swinhoe, Ibis, 1874, p. 159.)

Tokio, Yokohama, Yezo.

181. Corvus corax, L. "Watari-garasu."

Specimens from the largest of the Chijima (Kurils), supposed to be of this species, in the Kaitakushi Museum and the Hakodate collection. Wings measure 17 inches.

182. Corvus pastinator, Gould. "Miyama-garasu."

Said to be plentiful in Hiroshina. Specimens obtained in Tokio referred to this species.

Hiroshima, Nikko.

183. Corvus dauricus, Pall. "Kokumaro-garasu."

A live specimen is in a bird-shop at Asakusa, Tokio, agreeing with one of the figures in the 'Fauna Japonica.'

184. Corvus neglectus, Swinh.

Figured in the 'Fauna Japonica' as the young of the above.

185. Pica media, Blyth. "Hizen-Karasu."

Included in the 'Fauna Japonica,' from a native drawing, under the name of *P. varia japonica.* May possibly be found in the south-west of Japan.

186. Cyanopica cyanus (Pall.). "Onagadori."

Breeds in marshy places, where it is common. Not found in Yezo. Mr. Swinhoe remarks, on a specimen sent him, that it wants the white tips to the rectrices, except the two central ones.

Tokio, Kawaraki.

187. Nucifraga caryocatactes. "Hoshi-garasu."

Rather plentiful half-way up Fujisan in September, where it may be usually seen or heard. Found also in Yezo. (Blakiston, Ibis, 1862, p. 326.)

Fujisan, Yezo.

188. Garrulus brandti, Eversm. "Miyama-kakisu."
Apparently confined to Yezo. (Blakiston, Ibis, 1862, p. 326; Swinhoe, Ibis, 1875, p. 450.)

189. Garrulus japonicus, Bp. "Kakisu."
Garrulus glandarius japonicus, F. J.
Breeds on the mountains; comes down in the winter to the plains. Not observed in Yezo, where it is replaced by the preceding species. (Swinhoe, Ibis, 1876, p. 334, et 1877, p. 144.)
Tokio, Yokohama, Yamato, Oyâma, Fujisan.

190. Sturnus cineraceus, T. "Mukodori."
Breeds in holes in fir trees about Kawasaki and Tokio, where it stays all the year round. In summer in Yezo. Eggs pale blue. (Swinhoe, Ibis, p. 159.)
Tokio, Yokohama, Kawasaki, Yezo.

191. Sturnus sericeus, Gmel. "Chosen-mukodori."
One specimen, obtained by Mr. Ota from a birdcatcher.

192. Sturnia pyrrhogenys, T. & S. "Shima-mukodori."
A large flock collects every autumn in a bamboo thicket between the foot of Kintokisan and Goten. Migratory. (Blakiston, Ibis, 1862, p. 327; Swinhoe, 1874, p. 159.)
Fujisan, Goten, Tokio, Yezo.

193. Lanius bucephalus, T. & S. "Modzu."
Builds near Yokohama in March. Stays all the year round on the plains. Eggs five or six, yellowish white, speckled with light brown. Nest made of dead grass and twigs, lined with finer grass. (Swinhoe, Ibis, 1875, p. 450.)
Nagasaki, Yokohama, Tokio, Yamato, Idzu, Yezo.

194. Lanius superciliosus, L. "Aka-modzu."
Replaces *L. bucephalus* on the plains at the foot of Fujisan. Eggs white, with a shade of brown, spots large, of a liver-colour. (Swinhoe, Ibis, 1875, p. 450.)
Fujisan, Yezo.

195. Lanius excubitor, Vig.? "O-modzu."
A specimen obtained in Yezo is probably of this or of an

allied species; the species is also included in the list of the 'Fauna Japonica' from a native drawing.

196. CYANOPTILA CYANOMELÆNA, T. "Oruri."
Muscicapa melanoleuca, ♂, F. J.
Muscicapa gularis, ♀, F. J.

Breeds on Fujisan; sings prettily, is kept as a cage-bird as much for its song as for its beautiful plumage. Migratory.

Fujisan, Oyama, Shikoku, Yamato, Yezo.

197. BUTALIS LATIROSTRIS (Raffles). "Shima-modzu."
Muscicapa cinereo-alba, F. J.

Very common in Yamato. Migratory.

Fujisan, Yamato, Yezo.

198. BUTALIS SIBIRICA (Gm.). "Chigo-modzu."

Obtained at Fujisan, doubtfully attributed to this species; and a single specimen at Hakodate may be the same.

Fujizan, Yezo?

199. XANTHOPYGIA NARCISSINA, T. "Kibitaki."
Muscicapa narcissina, ♂, F. J.
Muscicapa hylocharis, ♀, F. J.

The male does not attain full plumage till after the first season, the young resembling the female. This species does not always migrate, as a specimen was obtained in December 1874 from the north of Tokio. It sings sweetly, and breeds on Fujisan; not uncommon in Yezo. (Blakiston, Ibis, 1862, p. 318; Swinhoe, 1874, p. 159.)

Fujisan, Tokio, Yamato, Yezo.

200. MUSCICAPA MUGIMAKI, T. & S. "Ko-tsubame."

Figured in the 'Fauna Japonica.'

201. TCHITREA PRINCEPS, T. "Sankocho."

This, the most beautiful of the Japanese birds, is very common on Fujisan; when alive the beak is a pale greenish blue, and the eyes are surrounded with a band of skin of a similar colour. Builds a beautiful small round open nest of moss and spiders' webs. Eggs five, long, spotted with red. The male loses his long tail in the autumn; and both sexes may then be seen in company with flocks of Tits, catching the insects disturbed by the latter. They do not leave Yamato before October. It derives its native name from its whistle, resembling the syllables *san-ko-cho*.

Fujisan, Yamato.

202. PERICROCOTUS CINEREUS (Lafr.). "Raifuri," "Sanshokui.".

Common on Fujisan. Eggs five, light bluish green; a nest found which also contained a large Cuckoo's egg of a similar colour, probably of the "Iiuichi," built in a hole in a stump.

Fujisan, Yamato.

203. AMPELIS GARRULA, L. "Ki-renjaku."

Does not appear to be found south of Yezo. (Swinhoe, Ibis, 1874, p. 158.)

204. AMPELIS PHŒNICOPTERA, T. "Hi-renjaku."

Seen occasionally in small flocks; said to be common at Nikko. Mr. Whitely says he obtained it at Hakodate.

Yokohama, Tokio, Nikko.

205. PARUS ATER, L. "Hi-gara."

In winter in flocks on the plains with other Tits. (Blakiston, Ibis, 1862, p. 321; Swinhoe, Ibis, 1874, p. 155.)

Yokohama, Tokio, Yezo.

206. PARUS BOREALIS, Selys. "Ko-gara."

In Yezo. (Swinhoe, Ibis, 1874, p. 156.)

207. PARUS MINOR, T. & S. "Shi-jukara."

Breeds high up Oyama and in Tokio; seen commonly on the plains near Tokio in winter. (Swinhoe, Ibis, 1874, p. 156.)

Oyama, Oshima, Tokio, Yokohama, Yezo.

208. PARUS VARIUS, T. & S. "Yama-gara."

Keeps to the mountains, summer and winter. Breeds on Fujisan. Young rather different from the adult; but does not otherwise vary. In Yezo in summer. (Blakiston, Ibis, 1862, p. 321; Swinhoe, Ibis, 1874, p. 155.)

Oyama, Fujisan, Yamato, Yezo.

209. ACREDULA TRIVIRGATA (Temm.). "Enaga."

Breeds on Fujisan; visits the plains in winter; not seen in Yezo.

Fujisan, Tokio, Yokohama.

210. Acredula caudata (Linn.). "Shima-e-naga."

Not yet found south of Yezo.

211. Sitta europæa, L. "Go-jukara."

Common among beech trees on the higher ranges of Ominisan. Northern specimens large. (Swinhoe, Ibis, 1874, p. 152.)

Yamato, Yezo.

212. Accentor rubidus, T. & S. "Kayakuguri."

Accentor modularis rubidus, F. J.

Not a common bird; one obtained on Oyama in winter, also by Mr. Whitely at Hakodate (Ibis, 1867, p. 198).

Oyama, Yezo.

213. Accentor, sp. inc. "Iwa-susume."

A live specimen obtained by Mr. Ota: very like *A. alpinus*, but seems more rufous.

214. Anthus agilis, Sykes. "Bindzui."

Anthus arboreus, var., F. J.

Builds commonly on Fujisan; nest generally placed on the ground, made of dead grass, lined with finer; sometimes the fruit-stalks of mosses are used for a lining, forming a very pretty nest. Eggs five, whity brown, patched with red-brown. All specimens are from the main island. (Swinhoe, Ibis, 1877, p. 144.)

Fujisan, Yamato.

215. Anthus japonicus, T. & S. "Tahibari."

In winter commonly about Yokohama, and specimens from several localities in Yezo. (Swinhoe, Ibis, 1875, p. 449.)

216. Anthus, sp. inc.

A Pipit with a reddish brown throat, obtained in the Kuril Islands. Specimens in the Hakodate collection.

217. Motacilla japonica, Swinh. "Seguro-sekiri."

Motacilla lugens, F. J.

Very common in summer and winter. Specimens in different stages of plumage from Yezo. (Swinhoe, Ibis, 1874, p. 156.)

Tokio, Yokohama, Fujisan, Yezo, Yamato.

218. MOTACILLA MELANOPE, Pall. "Kisekiri."
Motacilla boarula, F. J.

Breeds on Fujisan and Tokio in the thatch of houses. Eggs of a dirty white, spotted with greyish brown. (Swinhoe, Ibis, 1874, p. 154.)

Oyama, Tokio, Yokohama, Fujisan, Yezo, Yamato, Nagasaki.

219. CALAMODYTA MAACKII, Schrenck.

A specimen obtained in Yezo, identified by Mr. Swinhoe (Ibis, 1874, p. 154).

220. CALAMODYTA INSULARIS, Wall.

Obtained in Yezo, identified by Mr. Swinhoe (Ibis, 1876, p. 332).

221. CALAMOHERPE ORIENTALIS, T. & S. "O-yoshi."
Salicaria turdina orientalis, F. J.

To be found wherever reeds grow, also on the plains about Fujisan. Male very vociferous, singing in the moonlight. Arrives at Tokio at the end of April, generally in very worn plumage. Common at Yezo. (Blakiston, Ibis, 1862, p. 317; Swinhoe, Ibis, 1874, p. 153.)

Fujisan, Tokio, Yokohama, Kawasaki, Yezo.

222. HERBIVOX CANTILLANS? T. & S. "Ko-yoshi."

In habits and song a miniature counterpart of the preceding species, but prefers long, dry, grassy mountain-slopes on the mainland; also obtained in Yezo. Specimens seem to agree with the 'Fauna-Japonica' plate.

Fujisan, Yamato, Yezo.

223. HERBIVOX CANTANS, T. & S. "Uguisu."

This bird is the Japanese Nightingale; it does *not* migrate. Song not very extensive, but has a few sweet notes. It is a common cage-bird, high prices being given for a good songster. Commences to sing about Tokio on the 22nd March. Heard in Yezo in summer, but no specimens yet obtained in that island.

Tokio, Yokohama, Fujisan, Oyama, Yezo.

224. Arundinax blakistoni, T.

Obtained in Yezo; described by Mr. Swinhoe (Ibis, 1876, p. 332, pl. viii.).

225. Phylloscopus coronatus, T. & S. "Meboso."

Rather common. In Yezo in summer. (Blakiston, Ibis, 1862, p. 317.)

226. Phylloscopus xanthodryas, Swinh.

Obtained high up Fujisan; has a soft, low, sibilant song. One specimen obtained in Yezo, probably of this species. Mr. Swinhoe says *P. borealis* is found at Nagasaki.

Fujisan, Yezo.

227. Urosphena squamiceps, Swinh.

A specimen obtained by Mr. H. Heywood Jones at Fujisan in June 1877. Hakodate specimen identified by Mr. Swinhoe (Ibis, 1874, p. 155, et 1877, p. 205, pl. iv.).

Fujisan, Yezo.

228. Locustella subcerthiola, Swinh. "Shima-senniu."

Yezo. (Swinhoe, Ibis, 1874, p. 153.)

229. Locustella, sp. inc. "Leka."

About Tokio.

230. Locustella brunneiceps (Temm.). "Senniu."

Figured in the 'Fauna Japonica.' Specimens referred to this species not yet sent for identification.

Yezo.

231. Troglodytes fumigatus, Temm. "Misosazai."

Troglodytes vulgaris, F. J.

Male larger than the female. A nest found built against the rock under the Otaki waterfall, Oyama, in June, containing nearly full-fledged young. Southern specimens smaller than those from Yezo. (Swinhoe, Ibis, 1874, p. 152.)

Fujisan, Oyama, Tokio, Yokohama, Yamato, Yezo.

232. Regulus japonicus, Bp. "Ki-kuitadaki."

Common in winter, flying together with flocks of Tits. (Blakiston, Ibis, 1862, p. 320.)

Yezo, Tokio, Yokohama, Nagasaki.

233. Cinclus pallasi, T. "Kawa-garasu."

Very common on all swift-running mountain-streams. (Swinhoe, Ibis, p. 449.)

Oyama, Fujisan, Kintokisan, Yezo.

234. Erithacus akahige, T. & S. "Komadori."

Breeds on high mountains. It is a favourite cage-bird with the natives. Siebold's name is incorrect, the "Akahigi" being the next species. Mr. Maximovitch found this bird at Hakodate; but whether in a wild state or not is not clearly stated.

Fujisan, Yamato, Oyama.

235. Erithacus komadori, T. & S. "Akahigi."

Siebold has reversed the native names of these two birds, causing much perplexity to native ornithologists, who say that this latter species is not a native of Japan, those occasionally seen in cages being obtained from Corea.

236. Larvivora cyane (Pall.). "Ko-ruri."

Breeds on Fujisan, but is not common. A specimen obtained at Hakodate.

Fujisan, Yezo.

237. Ruticilla aurorea (Pall.). "Jobitaki."

Numbers winter on Ooshima. Breeds on mountains. Yezo in summer. (Blakiston, Ibis, 1862, p. 318; Swinhoe, Ibis, 1875, p. 449.)

Yokohama, Tokio, Ooshima, Yezo.

238. Ianthia cyanura (Pall.). "Ruribitaki."

In winter about Yokohama, in summer high up Fujisan, also in Yezo. (Blakiston, Ibis, 1862, p. 318; Whitely, Ibis, 1867, p. 197.)

Yokohama, Fujisan, Yezo.

239. Calliope camtschatkensis (Gm.). "Nogoma."

Lusciola calliope, F. J.

A specimen, thought to be this bird, seen wintering on Ooshima. Several specimens obtained in Yezo and Kuril Islands.

Yezo, Kuril Islands, Ooshima?

240. PRATINCOLA INDICA, Blyth. "Nobitaki."
Saxicola rubicola, F. J.

Breeds on Fujisan about Yamanaka Lake. Common in Yezo. (Whitely, Ibis, 1867, p. 197; Swinhoe, Ibis, 1874, p. 155.)

Fujisan, Yezo.

241. MONTICOLA SOLITARIA, Müll. "Isohiyo-dori."
Turdus manillensis, F. J.

Always keeps to the coast among rocks; very abundant on Hatsushima, at Idzu. Occasionally seen flying about the roofs of houses in the settlement of Yokohama in winter. Not uncommon in Yezo. (Swinhoe, Ibis, 1874, p. 157.)

Yokohama, Atami, Ooshima, Hatsushima, Awa, Yezo.

242. HYPSIPETES AMAUROTIS, T. & S. "Hiyo-dori."
Orpheus amaurotis, F. J.

One of the most abundant birds; it is familiarly known as the "Screecher," from its song, which is any thing but Orphean. In winter on the plains, and in summer on the mountains. Nest placed in a bush, made of twigs, moss, and roots, and lined with fine roots. Eggs five, pinkish white, thickly speckled with dark red. A few occasionally remain at Hakodate in winter (Swinhoe, Ibis, 1874, p. 158).

Tokio, Yokohama, Oyama, Fujisan, Nagasaki, Yamato, Shikoku, Yezo.

243. TURDUS SIBIRICUS, Pall.

Given in the 'Fauna-Japonica' list. Two young birds in the Hakodate collection were identified by Mr. Swinhoe. (Blakiston, Ibis, 1863, p. 98.)

244. TURDUS PALLIDUS, Gmel. "Chajinai."
Turdus daulias, F. I.

Occasionally obtained. A specimen obtained in Yezo compared with Chinese examples. Also given in Mr. Whitely's Hakodate list under the name of *T. daulias*.

Yokohama, Yezo.

245. TURDUS CARDIS, T. "Kuro-tsugu."

Breeds commonly on Fujisan. Sings beautifully. Nest made almost wholly of moss, and often placed on a stump or built against the side of a tree. Eggs five, of a greenish or reddish white, patched all over with umber-brown. (Blakiston, Ibis, 1862, p. 319; Whitely, Ibis, 1867, p. 199.)

Fujisan, Yezo.

246. TURDUS NAUMANNI, Temm. "Akajinai."

One specimen, obtained from Fujisan by Mr. Ota. Two specimens at Hakodadi, compared with others in the same collection from China.

Yezo, Fujisan.

247. TURDUS OBSCURUS, Gmel.

Turdus pallens, F. J.

Given in the 'Fauna-Japonica' list.

248. TURDUS CHRYSOLAUS, Temm. "Akapara."

Breeds on Fujisan; sweet songster. Seen on the plains in winter, generally singly. Nest placed in bushes; made of grass, moss, and twigs. Eggs five, light bluish green, speckled all over with small spots of reddish brown.

Yokohama, Tokio, Fujisan, Oyama, Yezo.

249. TURDUS FUSCATUS, Pall. "Choma."

Very abundant in winter about Tokio and Yokohama. Winters also in Yezo, probably breeds further north. (Blakiston, Ibis, 1862, p. 319; Swinhoe, Ibis, 1874, p. 157.)

Yokohama, Tokio, Yezo.

250. TURDUS, sp. inc. "Mamejiro."

Mr. Ota has a live specimen, dull black, with a conspicuous white eyebrow and a few white feathers about the vent. Breeds on Fujisan, has a sweet song, but not very loud. Mr. H. Heywood Jones obtained one there in June 1877*.

Fujisan.

251. OREOCINCLA VARIA (Pall.). "Nuejinai."

One shot on Fujisan in June. No song, but has a single penetrating note, like the plaintive whistle of a Bullfinch, which can be heard for a long distance; it is very shy, but can easily be attracted by imitating it. Numbers are brought to the Yokohama game-market in winter from Koshni. Only one specimen obtained in Yezo. (Swinhoe, Ibis, 1877, p. 144.)

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* [This is, no doubt, *T. sibiricus*, which is also given above (243), p. 240.—EDD.]

Fujisan, Koshin, Yezo.

252. Alauda japonica, T. & S. "Hibari."

Breeds at the foot of Fujisan; its habits are like that of the English Skylark; but its song is rather different. Common in Yezo. There is a good deal of variation in size; but all specimens sent to Mr. Swinhoe have been pronounced to be of this species. (Blakiston, Ibis, 1862, p. 327; Swinhoe, Ibis, 1874, p. 162, et 1877, p. 145.) The larger specimens may be *A. arvensis.*

253. Alauda alpestris. "Iwa-hibari."

Given in the list of the 'Fauna Japonica;' the Fujisan hunters frequently speak of a "Iwa-hibari," *i. e.* Rock Lark, as being found high up the mountain, which may prove to be this species. No specimens obtained.

254. Emberiza ciopsis, Bp. "Ho-jiro."

Emberiza cioides, F. J.

This is the most abundant Bunting throughout Japan, and is one of the very few birds which remain to breed on the plains in summer. It also breeds on Fujisan. Nest made of dry grass, lined with finer grass and rootlets, placed on or near the ground. Eggs five, whitish to brownish white, streaked and scrawled over with black lines, very variable. Piebald and other varieties of this bird not uncommon. (Blakiston, Ibis, 1862, p. 328; Swinhoe, Ibis, 1874, p. 161.)

Abundant everywhere.

255. Emberiza fucata, Pall. "Ho-aka."

Breeds on Fujisan; common in the winter round Yokohama, and also in Yezo. (Blakiston, Ibis, 1862, p. 328; Swinhoe, Ibis, 1874, p. 161.)

Yokohama, Fujisan, Yezo.

256. Emberiza elegans, Temm. "Miyama-hojiro."

Nikko; said to be found also in the neighbourhood of Nagasaki. (Swinhoe, Ibis, 1877, p. 145.)

257. Emberiza rustica, Pall. "Kashira-daka."

A common bird in the winter on the main island, and in summer in Yezo. (Blakiston, Ibis, 1862, p. 328; Swinhoe, Ibis, 1874, p. 161.)

Yokohama, Tokio, Yezo.

258. Emberiza personata, Pall. "Aoji."

A very common bird all the year round about Tokio. Breeds on Fujisan; nest generally placed on the ground, made of dead grass. Eggs five, whitish, with brown patches and darker spots. A few winter in Yezo.

Yokohama, Tokio, Oyama, Fujisan, Yezo.

259. Euspiza aureola, Pall. "Shima-aoji."

A specimen collected in Yezo, and one obtained at a bird-shop in Tokio, compared with Chinese examples of this species.

260. Euspiza variabilis, T. & S. "Kuroji."

Rather common on Oyama in winter. Specimens also obtained in Yezo. (Swinhoe, Ibis, 1875, p. 450.)

261. Euspiza sulphurata, T. & S. "Nojiko."

Migratory. Breeds on Fujisan, where it is very common in June and July. Nest made of dead grass. Eggs five, whitish brown patches and darker spots, sometimes scrawled with irregular lines. Sings prettily, and is a common cage-bird in Tokio. Mr. Whitely obtained it at Hakodate (Ibis, 1867, p. 203).

Fujisan, Yezo.

262. Euspiza rutila, Pall. "Shima-nojiko."

Figured in the 'Fauna Japonica.'

263. Schœnicola yessoensis, Swinh. "Nabikaburi."

One specimen, procured at Fujisan in July, from the shores of Yamanaka Lake, varies slightly from northern specimens. Common on swampy land in Yezo in summer. (Blakiston, Ibis, 1863, p. 99; Swinhoe, Ibis, 1874, p. 161.)

Fujisan, Yezo.

264. Schœnicola pyrrhulina, Swinhoe. "O-jorin."

Very common in the Yokohama game-market, brought from Koshin in winter. Described by Mr. Swinhoe from a specimen from Yezo in autumn plumage. Specimens in spring plumage in the Hakodate collection. (Swinhoe, Ibis, 1876, p. 333, pl. viii.)

Yokohama, Koshin, Yezo.

Schœnicola pallasi, given by Mr. Swinhoe as found at Hakodate, ought not to have been included.

265. Plectrophanes nivalis (L.). "Ukehojiro."

Yezo in winter; this bird was taken for a variety of *Emberiza ciopsis* by the native collectors. Specimen in the Hakodate collection.

266. Fringilla montifringilla, L. "Atori."

Large flocks come down in winter near Yokohama. Not uncommon in Yezo. (Swinhoe, Ibis, 1874, p. 160.)

Yokohama, Tokio, Yezo.

267. Passer montanus (L.). "Susume."

The common House-Sparrow of Japan; eggs vary from purple-brown to dirty white. (Blakiston, Ibis, 1862, p. 327.)

268. Passer rutilans, Temm. "Niunai-susume."

Occasionally obtained in the Yokohama game-market in winter, brought from Koshiu. In mountainous parts of Yezo; possibly migrates. (Blakiston, Ibis, 1862, p. 328; Swinhoe, Ibis, 1877, p. 145.)

Yezo, Koshiu.

269. Chlorospiza kawarahiba, T. & S.

Figured in the 'Fauna Japonica.' Yezo specimens identified by Mr. Swinhoe (Ibis, 1874, p. 160).

270. Chlorospiza sinica (L.). "Kawara-hiwa."

Large flocks on the plains in winter. Builds on Fujisan. Nest built of moss, lined with hair. Eggs five, greenish white, spotted with brownish red. Mr. Whitely includes this in his list of Hakodate birds, and considers it the most common of the two species (Ibis, 1867, p. 202).

Yokohama, Tokio, Fujisan, Oyama, Nagasaki, Yezo.

271. Chrysomitris spinus (L.). "Ma-hiwa."
Common among fir trees in winter. Found in Yezo. (Blakiston, Ibis, 1863, p. 327.)
Yokohama, Tokio, Yezo.

272. Ægiothus borealis, Temm. "Beni-hiwa."
Yezo specimens identified by Mr. Swinhoe (Ibis, 1863, p. 327).
Yezo.

273. Ægiothus linaria (L.). "Ko-beni-hiwa."
Yezo specimens, also identified by Mr. Swinhoe (Ibis, 1874, p. 160).
Yezo.

274. Leucosticte brunneinucha, Brandt. "Hagi-mashiko."
Common in winter in Yezo. One specimen obtained at Hakodate in May. (Swinhoe, Ibis, 1875, p. 450.)
Yezo.

275. Uragus sanguinolentus, T. & S. "Beni-mashiko."
Common in Yezo. (Blakiston, Ibis, 1863, p. 328; Swinhoe, Ibis, 1874, p. 160.)

276. Carpodacus roseus, Pall. "O-mashiko."
Specimen shot in Yezo; others purchased at Tokio. Mr. Swinhoe, to whom one was sent, pronounced it to be this species (Ibis, 1877, p. 145).

277. Strobilophaga enucleator (L.). "Ginzan-mashiko."
The Kaitakushi possess a specimen of a Pine-Grosbeak, probably this or an allied species, said to have been obtained in Yezo.

278. Coccothraustes japonicus, Bp. "Shime."
Seen about Yokohama in winter, tolerably common in Yezo. (Swinhoe, Ibis, 1874, p. 160.)
Yokohama, Tokio, Yezo.

279. Coccothraustes personatus, Schleg. "Ikaru."
Found commonly on Fujisan in July, has a pleasing whistle, and is capable of being made very tame. Mr. Whitely ob-

tained this species at Hakodate. (Whitely, Ibis, 1867, p. 201; Swinhoe, Ibis, 1877, p. 145.)

Fujisan, Oyama, Shikoku, Yezo.

280. Coccothraustes melanurus (Gmel.). "Shima-ikaru."

A specimen, supposed to be this species, obtained from a bird-dealer at Tokio.

281. Loxia albiventris, Swinh. "Isuka."

In winter in Yezo. (Swinhoe, Ibis, 1875, p. 450.)

282. Pyrrhula orientalis, T. & S. "Teri-uso."

In winter about Yokohoma; heard on Fujisan in July; not uncommon in Yezo. (Blakiston, Ibis, 1862, p. 328; Swinhoe, Ibis, 1874, p. 160.)

Yokohama, Fujisan, Yezo.

283. Pitta, sp. inc. "Bupocho."

A *Pitta* is given in the list of the 'Fauna Japonica.' The Yamashita Hakuraukai have a drawing of a bird obtained at Nikko, named "Bupocho," which looks very like a *Pitta*.

284. Ninox japonica, T. & S. "Aobadzuku."

Strix hirsuta japonica, F. J.

Rather common in the summer about Yokohama. Specimen, said to have been obtained by the Kaitakushi in Yezo, in the museum.

285. Syrnium rufescens, Temm. "Fukuro."

Strix fuscescens, F. J.

This is the most abundant Owl met with in the neighbourhood of Tokio. Northern specimens are much lighter than those from the south. (Whitely, Ibis, 1867, p. 194.)

Tokio, Yokohama, Yamato, Oyama, Yezo.

286. Asio accipitrinus (Pall.). "Ko-meme-dzuku."

Common in Yezo. Specimens in the Hakodate collection compared with Chinese examples. (Whitely, Ibis, 1867, p. 195.)

287. Asio otus (L.). "Torafu-dzuku."

Not uncommon about Yokohama. Mr. Whitely obtained it at Hakodate (Ibis, 1867, p. 195).

288. Bubo maximus, Sibbald. "Shimafukuro."
The Yamashita Hakuraukai possess a live specimen; and this species has been shot in Yezo.

289. Scops semitorques, Schleg. "O-konohadzuku."
Common; Yezo specimens identified by Mr. Swinhoe (Ibis, 1875, p. 448).
Yezo, Tokio, Yokohama, Oyama.

290. Scops stictonotus, Sharpe.
Otus scops japonicus, F. J.
Rather common. (Swinhoe, Ibis, 1875, p. 448.)

291. Aquila chrysaetus (L.). "Inu-washi."
Included in the 'Fauna-Japonica' list. The Keyoiku-Hakubusukan have a live specimen. Another specimen, male, obtained in the Yokohama game-market: expanse 6 feet, length 2 feet 8 inches, wing 23 inches, tail, except at the tip, white. The Hakubusukan specimen also had a white tail (but it is now greyish brown), conspicuously barred with black.

292. Haliaetus albicilla (L.). "O-jiro-washi."
A live specimen at the Yamashita Hakuraukai, and another at the Kaitakushi. The Ainos in Yezo are in the habit of keeping this species alive. Breeds in Yezo.

293. Haliaetus pelagicus, Pall. "O-washi."
The Keyoiku Hakabusukan have a specimen procured from Koshiu.

294. Pandion haliaetus (L.). "Mesago."
Builds near Yokohama, on Sarushima, where it remains all the year round. Obtained in Yezo. No specimen has yet been sent to Europe for careful comparison. Kaempfer mentions this bird in his 'History of Japan' (vol. i. p. 130).

295. Milvus melanotis, T. & S. "Tombi."
Non-migratory. Swarms in Tokio, picking up offal, dead rats, &c. A live dark specimen in the Yamashita Hakuraukai is called "Shima Tombe," and may be distinct. The nest, usually placed in a *Cryptomeria*, is composed of a large

platform of sticks, with bits of rag, paper, &c. for lining. Nidification commences early in March, the young, however, not leaving the nest before June. Lays two large eggs, of a dull white, with liver-coloured blotches. Abundant in Yezo. (Blakiston, Ibis, 1862, p. 314; Swinhoe, Ibis, 1874, p. 150.)

296. SPIZAETUS ORIENTALIS, T. & S. "Kuma-taka."

This fine bird builds on Oyama, where it remains all the year round; it can easily be attracted within shot by imitating a monkey's cry. Specimens obtained in Yezo agree fairly with the figure in the 'Fauna Japonica.'

Oyama, Yamato, Yezo, Nikko.

297. ARCHIBUTEO LAGOPUS (Gm.). "Keashinosuri."

A specimen in the Hakodadi collection is referred to this species.

298. BUTEO JAPONICUS, T. & S. "Akanosuri."

Breeds on Fujisan, where a young bird was obtained from the nest, of a dark colour; the Grey Buzzard figured in the 'Fauna Japonica' as the young of this bird must therefore be a distinct species. Yezo specimens are referred to this species.

299. BUTEO, sp. inc.

The grey Buzzard figured in the 'Fauna Japonica,' referred to above. No specimens yet obtained correspond with this.

300. BUTEO HEMILASIUS, T. & S. "O-nosuri."

Figured in the 'Fauna Japonica,' probably *Archibuteo aquilinus*, Hodgs.

301. POLIORNIS POLIOGENYS, T. & S. "Sashiba."

Very common in Yamato and Shikoku, where it is almost the only Hawk to be seen.

302. PERNIS APIVORUS (L.). "Hachi-kuma."

Given in the list of the 'Fauna Japonica.'

303. ASTUR PALUMBARIUS (L.). "O-taka."

This is the bird most used for hawking in Japan. The young are very different from the adult, having brown spots on the breast and a brown back. Only one adult specimen in the Hakodate collection, obtained in Yezo.

Nikko, Tokio, Yokohama.

304. ACCIPITER NISUS (L.). ♂ "Konori," ♀ "Haitaka." A common bird, also used for hawking. Found also in Yezo. (Blakiston, Ibis, 1862, p. 314.)

305. ACCIPITER GULARIS, T. & S. "Tsume." Figured in the 'Fauna Japonica. Obtained in Yezo by Commodore Perry's Expedition. Other specimens since obtained. (Swinhoe, Ibis, 1863, p. 443.)

Yezo.

306. TINNUNCULUS JAPONICUS, T. & S. "Cogubeho." Common, builds in trees in Uyeno Park. Not found hitherto in Yezo.

Tokio, Yokohoma.

307. HYPOTRIORCHIS SUBBUTEO, L. "Chigohayabusa." Yezo specimen identified by Mr. Swinhoe (Ibis, 1875, p. 448).

308. HYPOTRIORCHIS ÆSALON, L. "Kochogenbo." Occasionally obtained. (Swinhoe, Ibis, 1877, p. 144.)

309. ERYTHROPUS AMURENSIS. Specimens in Hakodate collection referred to this species.

310. FALCO PEREGRINUS, Tunst. "Hayabusa." Rather scarce; this is believed not to be used by the Japanese for hawking. Specimen from Yezo identified. (Blakiston, Ibis, 1862, p. 314.)

311. FALCO CANDICANS, Gm. "Shiro-ohayabusa." This bird is figured in native drawings; it is also given in the 'Fauna-Japonica' list on similar authority.

312. CIRCUS CYANEUS (L.). "Chiuhi." Common in the winter at Susaki, Tokio, in summer in Yezo. (Swinhoe, Ibis, 1875, p. 448.)

Yezo, Tokio.

313. Circus spilonotus, Kaup. (Swinhoe, Ibis, 1877, p. 144.)

A pair of these birds frequented the Susaki flats, Tokio, both in summer and winter, one of which was shot by Mr. C. Bland, December 1877; length 24 inches, wing 17.

Yezo, Tokio.

Yokohama, 28th December, 1877.

[We have received a box of some 50 skins of birds, sent in order to assist in determining some of the uncertain species in this list. We have placed them in the hands of Mr. Seebohm, who has kindly undertaken to prepare a report upon them.—Edd.]

XIX.—*Notes on the Avifauna of New Caledonia.* By Edgar L. Layard, C.M.G., F.Z.S., &c., H.B.M. Consul, and E. Leopold C. Layard, Vice-Consul at Noumea. *With Remarks* by the Rev. Canon Tristram, F.R.S., C.M.Z.S., &c.

On the 23rd of last month we had the pleasure of receiving our copy of 'The Ibis' for July last (4th series, vol. i. no. 3), putting us in possession of M. Marie's list of New-Caledonian birds, which the Editors have been kind enough to print for our information, and for which our hearty thanks are due. Surely we may *now* hope that we are in possession of all the literature respecting the birds of these islands. We have spared no pains or expense to acquire it; and as our list of birds differs somewhat from M. Marie's, we propose to make a few remarks on the latter, especially as we can add somewhat to its numbers, both by the enumeration of some species of our own acquiring, and by the description of several novelties which we have been fortunate enough to discover in an old collection belonging to the French colonial authorities, and destined for the Colonial Museum, now in process of building. This collection was made, as the labels show, by two French gentlemen, M. Guillanton, Lieutenant d'infanterie de Marine, and M. Déplanche, in the island of Lifu, the central island of the Loyalty group. It lies about sixty miles from the nearest point of New Caledonia; and as its avifauna closely resembles that of the larger island, it may be, with the rest of the Loyalties, safely included with it in a natural group. Unfortunately, exposure to dust, mites, and rats, in ill-fitting cases with broken panes of glass, has damaged most of the speciensm beyond recovery, and the defective preparation of M. Guillanton's birds, both as to form and preservation, have especially marked them out for destruction. Still they afford a good foundation for a list of that island's birds, and the new species are so well marked that our wonder is they have escaped detection. They are said to have been in the cabinets so long that, in all probability, M. Marie must have seen them; and that they have been handled by some one who knew (or thought he knew) something about birds is evident from the fact that a specimen of an Australian *Platycercus* is marked in pencil "n'existe pas en Lifu:" and so also is a fine new *Merula*! but that, as will subsequently appear, is a mistake of the critic's!

We can but add that the novelties have so fired the zeal of L. L., that he has started off on a collecting-expedition to the spot, a fine opportunity offering. On his return we may perhaps have some further information to communicate.

The numbers used are those of M. Marie's list.

4. UROSPIZIAS APPROXIMANS (V. & H.).

Several specimens, in full adult plumage, occur in the Lifu collection. We have not met with it near Noumea.

5. UROSPIZIAS TORQUATA (Cuv.).

We have identified a Hawk, of which we have obtained several in immature garb, as belonging to this species; but we have never seen it in the full plumage described by Mr. Gould ('Handb. Birds of Austr.' p. 45).

[N.B. I have received a very fine adult specimen from Aneiteum, New Hebrides, procured by the Rev. J. Inglis; its first recorded occurrence in that group.—H. B. T.]

FALCO MELANOGENYS, Gould.

Two magnificent females of this fine Hawk, in full adult plumage, have been sent us from the "Ferme doméniale de

Yahoué," where they were shot by the superintendent; and two more have been seen by us, hovering over our house in pursuit of our broods of young chickens. Indeed, we skinned our second specimen with the gun by our side at the open window, fully expecting that the marauder would give us the chance of a shot! The first specimen weighed 2 lb, and the girth round the middle of the thigh was 3½ inches. It had a lizard in its gullet. This is the first instance in which this species has been recorded from New Caledonia: it is a fine addition to its avifauna.

6. CIRCUS WOLFI, Gurney, P. Z. S. 1865, p. 823.

[The differences between the New-Caledonian species and *Circus maillardi*, from Joanna and Réunion, with which M. Marie identifies it, are pointed out by Mr. Gurney in his description of *C. wolfi*. It has not come under the notice of Mr. Layard.—H. B. T.]

7. STRIX CASTANOPS, Gould.

We have not met with this species; but in the collection, *though not from Lifu*, is a bird that bears evidence on its label as having been killed somewhere in New Caledonia, which accords in description and in all its measurements with *Strix novæ-hollandiæ*, Stephens, as given by Gould (' Handb. Birds of Austr.' i. p. 65); and as such we, without doubt, consider it. This is another addition to the list.

10. COLLOCALIA LEUCOPYGIA, Wall.

[Identified as *C. linchi*, Horsf., by M. Marie, but, I believe, erroneously.—H. B. T.]

Common throughout the islands, and, we think, at least partially, migratory. It was very common about Noumea in the cold weather, up to the end of September or beginning of October; since then it has disappeared. E. L. L. lately (9th November) visited Honailou, about halfway up the east coast. Here the species was found breeding in some caverns in limestone rocks. The nests were composed of fine rootlets, strands of *Casuarina*, dry grass, and feathers, cemented together into a hard compact mass, and firmly fastened to the sloping rock by the saliva of the birds.

Diam. 2″ × 1″ 6‴, depth 1″. One single egg in each, pure white, rather truncated, axis 9‴, diam. 6‴.

The next species occurs in the Lifu collection, which does not contain the present one, though that does not prove its non-existence there.

COLLOCALIA UROPYGIALIS, G. R. G.

This is another of our additions to the avifauna. It frequents the forest and timbered country in preference to the open grass-lands or town (Noumea), though we have occasionally found it in the latter. E. L. L. observed it sparingly at Honailou in November.

[This is the common species of the New Hebrides.—H. B. T.]

COLLOCALIA, sp. inc. (*C. cinerea*, Gm.?).

Another species, entirely of a smoky brown, lighter beneath, without any white *uropygium*, was seen by E. L. L. near Noumea. It was probably identical with one brought by L. L. from Vate, or Sandwich Island, New Hebrides, which we identify with *C. cinerea* (Gm.).

[May not this be *C. spodiopygia*, Peal?—H. B. T.]

12. PLATYCERCUS CALEDONICUS (Gm.).

Is not this the female of *Nymphicus cornutus*? We have been unable to learn the existence of more than four species of Parrot in the island, of which we have seen specimens, viz. *Nymphicus cornutus, Cyanorhamphus saisseti, Psitteuteles diadema,* and *Trichoglossus massena*.

19. CHALCITES LUCIDUS (Gm.).

We have procured several of these small Shining Cuckoos, varying so much that we think we have got one, or more, of the species described by Mr. Gould; but this point must await comparison of ours with Australian specimens.

21. TURDUS XANTHOPUS, Forst.

This Blackbird is not uncommon in the neighbourhood of Noumea; but in the island of Lifu it is replaced, apparently, by a new and undescribed species, which we propose to dedicate to His Excellency the Governor, Admiral de Pritzbuer, to whom we owe the permission to pursue our researches into the avifauna of the island and its dependencies :—

TURDUS PRITZBUERI, n. sp.

Male. Entire head, chin, throat, and upper part of chest very pale sepia; the whole of the rest of the body, above and below, very dark sepia, some of the feathers of the abdomen having pale sepia edges; bill, feet, and legs pale yellow.

Length 8″, wing 3″ 7‴, tail 3″ 3‴, tarse 1″ 2½‴, bill 13‴.

Female (probably). Like the male, but the crown of the head and lower portion of chest brownish, and general colour of body not so dark.

Young bird. Top of head brown, spotted with rufous; back as in female, but faintly spotted with rufous; underparts deep warm rufous, spotted and irregularly marked with small broken bars of dark sepia.

This most interesting species is intermediate between *Merula tempesti,* Layard, from Taviuni, and *M. bicolor,* Layard, from Kandavu (Fiji). It approaches nearest to the first named, the colours being identical; but the Lifu bird has them much more "prononcé," the light sepia appearing almost white by contrast. On taking it to a resident of the Loyalty Islands, who is staying with my next-door neighbour (his brother-in-law), his wife exclaimed, "Oh! we eat lots of those, they are splendid 'gibier;'" and her servant, a Lifu man, standing by, added, "Him scrape on ground, all same fowl, we call him Wassasa."

23. PETRŒCA, sp., Gray.

In his 'Catalogue of the Birds of Tropical Islands' (p. 15), Mr. Gray calls this *P. forsteri* (*Turdus minutus,* Forster) and gives the Isle of Pines as its habitat. We have not yet seen it.

24. GERYGONE FLAVOLATERALIS (G. R. Gr.).

Acanthiza flavo-lateralis, Gray, P. Z. S. 1859, p. 161.

[This bird, described by Mr. Gray, and enumerated by M. Marie as an *Acanthiza,* is a very typical *Gerygone* (see Ibis, 1877, p. 357).—H. B. T.]

27. RHIPIDURA BULGERI, Layard, Ibis, 1877, p. 361.

[Included by M. Marie as *R. albiscapa,* Gould, to which Australian bird it is closely allied, but distinct. I have compared specimens sent by Mr. Layard, and also several New-Caledonian skins in the British Museum labelled *R. albiscapa*, and find that the distinctions already pointed out by Mr. Layard in 'The Ibis' hold good in all cases, the smaller size and the conspicuous white shafts of the rectrices discriminating the bird at a glance.—H. B. T.]

28. RHIPIDURA VERREAUXI, Marie.

Already recognized by the Editors of 'The Ibis' from a specimen I sent (see Ibis, 1877, p. 358).

29. EOPSALTRIA VARIEGATA, G. R. Gray.
30. EOPSALTRIA CALEDONICA (Gm.).

These are the same species, and rightly reunited by G. R. Gray in his catalogue (cf. 'Cruise of the 'Curaçoa,' Aves,' by G. R. Gray). We can only find two species here, this one and *E. flavigastra*, Verr. & Desm. They are very unlike in form and habits; *E. caledonica*, in form, resembles the Australian *E. australis*; whereas *E. flavigastra* resembles the Australian genus *Micrœca* (*M. macroptera*), especially in the flattened broad bill and Robin-like figure. Its habits are also similar. We have no generic description by us, Gould's 'Handbook of the Birds of Australia' falling lamentably short in this respect; but we have specimens of the birds before named, procured by E. L. L. in Australia.

35. PACHYCEPHALA, sp.

We only know the three species of *Pachycephala* previously named by M. Marie from the neighbourhood of Noumea; but there is a fine new species in the Lifu collection, which, as they all so much resemble one another as to afford little or no distinguishing mark, we propose to name after our respected "Director of the Interior"*:—

PACHYCEPHALA LITTAYEI, sp. nov.

Male. Upper three fourths of the head jet-black; chin and throat, from lower mandible, pure white, succeeded by a broad black collar, and then all the lower parts rich gamboge-yellow; upper parts yellowish green; wing- and tail-feathers greenish brown, the former edged exteriorly with the colour of the back. Length 7″ 6‴, wing 3″ 10‴, tail 3″ 2‴, tarse 13‴, bill 12‴.

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* We take this opportunity of correcting a typographical error (Ibis, 1877, pp. 356, 357): for "yellow-billed" (*Pachycephala xanthetræa*) read "yellow-bellied."

Female unknown. This may be the species indicated by M. Marie.

CLYTORHYNCHUS PACHYCEPHALOIDES, D. G. Elliot.

Described from New Caledonia (P. Z. S. 1870, p. 243), but omitted from M. Marie's list published the same year. We have not seen it.

36. ARTAMUS MELALEUCUS, Forst.

Common generally; appears in the Lifu collection. E. L. L. procured an *Artamus* at Honailou which differs slightly from this species. It is large, the black of the throat does not apparently descend so low on the chest (this may be occasioned by the stuffing); and the back has a decided brownish tinge.

Can this be

ARTAMUS ARNOUXI, Bp.?

which is given in Gray's 'Birds of Tropical Islands' as probably from New Caledonia, but of which we have no description*.

37. CAMPEPHAGA CALEDONICA (Gm.).

It is generally distributed, feeds on locusts and large insects. We have a bird in the Lifu collection which instantly strikes one as much darker than those killed on the main island. It may be different; we await more specimens of L. L.'s collecting.

GAZZOLA TYPICA, Bp.

MM. Verreaux and Des Murs, in the 'Revue,' include this amongst other species not noted by M. Marie. We do not know it†.

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* [This is an error of Mr. Gray. A supposed New-Caledonian species is named by Bonaparte (C. R. xxxviii. p. 538) *Ocypterus berardi*, and is concisely described as "noire!" Of *Artamus arnouxi* (named, and described as "*entièrement grise*," at the same time) the locality is not given.—EDD.]

† [Naturally enough; it is peculiar to Celebes!—EDD.]

43. Aplonis striata (Gmel.), and Nos. 44, 45, 46, & 47.

We cannot help thinking that much confusion exists in the nomenclature of these Starlings. We can only find one species near Noumea, the male, female, and young of which exhibit shades of plumage that might entitle them to any of the designations *striata, nigroviridis, viridigrisea,* or *atronitens* ! ! We are inclined to think this species ought to bear the name of *Aplonis caledonica,* Bp., the description and measurements of which, as given in the 'Revue Zoologique,' tally very well, except that the closed wing is 10 (not 9) centims. We have found this species also in the Lifu collection, and another one considerably larger, viz. length 8″ 6‴, wing 4″ 6‴, tail 3″ 1‴, tarse 1″, bill 1″. This latter we take to be *A. striata* (Gmel.) (=*Coracias pacifica,* Forst. p. 261), of which MM. Verreaux and Des Murs say in the 'Revue,' under the head of *A. viridigrisea,* G. R. Gray, "M. Gray rapproche cette espèce, avec doute, du *Coracias striata* de Gmelin, qui en serait la femelle." Its large size and robust bill at once distinguish it from the smaller species. It has also a *bluer* tinge (*A. caledonica* is *greenish*) ; there is also a browner tinge on the wing-primaries; and the undersides of the tail-feathers are *brown,* not black nor brown-black. The females are sooty, not black ; and one presents a decidedly "striated" appearance on the undersides and head.

48. Leptornis aubryanus, Verr. & Des Murs.

While at Honailou E. L. L. heard of a bird answering to the description of this, but with the bare space about the eye *orange,* instead of *crimson* as figured in the 'Cruise of the Curaçoa,' and described in the 'Revue Zoologique' by MM. Verreaux and Des Murs. Now we know, from experience, that orange-coloured skin, in drying, often assumes a reddish or brown tint; and we are half inclined to fancy that, the figure and description (*loc. cit.*) having been taken from skins, a mistake was made. If this is not so, there must be two distinct species of *Leptornis* in New Caledonia; for E. L. L. closely questioned his *two* informants, of whom one had seen, *and stuffed,* two specimens, and the other, a botanist of some note, knew the bird well from the other side of the island.

Both said it was *very rare* (and so admitted to be by the natives), and only found in dense high forest, near the summits of the mountains. The first said the *orange* changed much after death, but that he sent away the specimens (one to M. Marie !) soon after preparing them, so could not tell what colour they would ultimately have assumed.

50. Glycyphila modesta, G. R. Gray, and Nos. 51, 52, 53, & 54.

Here, again, we cannot help fancying some confusion exists, and that one species has done duty for several. We can only find *G. fasciata*, Forst., and what we identify as *G. chlorophæa* of the same author. This last is very common everywhere, and is clearly (if rightly identified) = to *G. caledonica*, Gray, = *G. modesta*, Gray ('Cruise of the Curaçoa,' pl. iv. fig. 1). E. L. L. obtained a *Glycyphila* at Honailou, which, at the first glance, he thought new to him, from its general ruddy tint; but a little examination showed that this colour was only derived from the ferruginous soil, the dust of which covered bush and flower and every thing else to such an extent that the bird's plumage was saturated with it by contact. It was only the common species!

56. Myzomela erythrocephala, Gould.

Not included by MM. Verreaux and Des Murs in their list; neither have we seen or heard of it; and the only species found near Noumea as yet by us has been No. 55, *M. sanguinolenta*; but in the Lifu collection are two birds which approach very nearly to Gould's description ('Handb. B. Austr.' vol. i. p. 556) of his *M. erythrocephala*. There are, however, marked differences, that, without actually comparing skins, induce us to think the bird is distinct, in which case we would suggest the name "*lifuensis*" for it, as it is probably confined to that island, and any name alluding to its colour would equally apply to other species. Gould says "the male has the head and rump scarlet, the remainder of the plumage deep chocolate-brown." Our bird has the *whole back* scarlet, as well as the rump and head, and the latter has a black patch extending from the nostril to the eye. We should likewise characterize the rest of the plumage as *sooty black*, certainly not "chocolate-brown."

Total length (skin) 4″ 3‴, wing 2″ 5‴, tail 1″ 10‴, tarse 8‴, bill 8‴.

[*Note.* In all the scarlet-backed species of *Myzomela* I find individuals, probably immature, in which the scarlet on the back is interrupted.—H. B. T.]

57. ZOSTEROPS XANTHOCHROA, G. R. Gray.

58. ZOSTEROPS GRISEINOTA, G. R. Gray.

Both these species are found round Noumea; but in Lifu they seem to be replaced by two entirely new species, the largest and smallest of the genus we have yet met with. We commence with the smallest, which we call

ZOSTEROPS MINUTA, sp. nov.

Upper parts all a bright yellow tinged with green, brightest on the front of the head; forehead as far as the eyes bright yellow; eyelids white, as usual, but with a narrow black line under the lower lid; chin, throat, chest, centre of belly, and under tail-coverts bright yellow; sides of belly and flanks buff; wing- and tail-feathers grey-brown, edged with the colour of the back. Length 3″ 8‴, wing 2″ 1‴, tail 1″ 6‴, tarse 8‴, bill 6‴.

The other we designate

ZOSTEROPS INORNATA, sp. nov.

Head above dull green; back obscure sepia, faintly tinged with green; no white eyelid visible; wing- and tail-feathers same as the back, but externally edged with green; chin greyish; throat and chest dirty greenish; sides of chest sepia-brown; flanks inclining to buff; centre of belly pale sepia; bill above very dark brown, below pale. Length 5″ 6‴, wing 3″ 1‴, tail 2″ 4‴, tarse 11‴, bill 11‴, very strong and sharp-pointed.

The obscure colours of this bird render a description of it very difficult; but when lying in company with others from these islands it is most conspicuous, from its sombre livery and robust shape. The label bears the native name "Sinekato."

ZOSTEROPS MELANOPS, G. R. Gray, B. Trop. I. p. 15, is omitted from M. Marie's list; we have not seen it. Mr. Gray (*loc. cit.*) states it is from the Loyalty Islands.

59. Erythrura psittacea (Gmel.).

Seems generally distributed, and is a favourite cage-bird. It occurs in the Lifu collection; but there is likewise another species from that island which seems to us quite new; unfortunately it is one of M. Guillanton's specimens, and consequently in very bad order; but enough remains to show that it is very distinct. We name it

Erythrura cyaneifrons, sp. nov.

General colour above and below green, rather lighter than that of the preceding; rump, upper tail-coverts, and tail-feathers dull scarlet, not nearly so bright as in the preceding; two central feathers elongated; forehead (and cheeks apparently) bright blue. There seems to be a narrow black line between the bill and the blue of the forehead, and a black patch over the lores; but the malpreparation of the specimen prevents an accurate description. Bill black; legs as in the preceding. Length 5″, wing 2″ 3‴, tail 2″ 3‴, tarse 7‴, bill 6‴.

This is not the female of the preceding, of which we have shot several; unfortunately the sex is not noted (none of the specimens in the collection are sexed); but it looks like a male in full plumage. It is a very interesting addition to the avifauna; and if L. L. succeeds in bringing a fair series of this, and of the others here indicated, we shall be able to correct any errors into which we may have fallen, or to add to our descriptions if necessary.

Macropygia albiceps (Temm.).

Mr. Gray ('Birds of Tropical Islands,' p. 43) includes this Pigeon among the birds of New Caledonia. We have not yet seen it; nor is it in M. Marie's list or in the 'Rev. Zool.'

[I can find no authority for including this bird in the fauna of New Caledonia. It seems to have crept into Gray's list in error.—H. B. T.]

63. Carpophaga pacifica (Gm.).

Quoted by M. Marie as *C. ænea*, G. R. G. We have a suspicion that there are several varieties, if not species, confounded under this title. A series from different islands is needed to show this.

60. PTILOPUS GREYI, G. R. Gray.

This little Dove is getting very scarce in New Caledonia proper; it occurs (several specimens) in the Lifu collection, and, we are told, is not uncommon in the Isle of Pines. We have it abundantly from the New Hebrides; and it is apparently the most widely distributed of all the *Ptilopi*.

We might here mention that, having lately received Cassin's 'Ornithology of the U.S. Expl. Exped.' with the Atlas of plates, we are convinced that, misled by Drs. Finsch and Hartlaub's 'Ornithologie,' we have assigned wrong habitats to *P. fasciatus*, Peale, and *P. apicalis*. The former is evidently the bird figured in the folio Atlas, pl. 31, and described from Samoa by Peale, whose not very exhaustive description is quoted entire.

A glimpse at the plate is quite sufficient to show the bird indicated. The patch of colour on the belly, well described as "purple," the dark orange-yellow of the patch following it, and of the under tail-coverts, and, above all, the bright yellow terminations of the tail-feathers, are the chief characteristics of the Samoan bird, *and of it alone* out of the *Ptilopi* found in the three groups, Navigators', Friendly, and Fiji Islands; and whatever names the others must bear, the Samoan bird is clearly entitled to that of *P. fasciatus*, Peale. Each of the three groups of islands named possesses but *one species* of these green and grey (cinereous) Doves; and in determining a species special attention should be given to the locality which furnished the typical specimen from which the original description was taken.

[On comparing a series from the different groups, and referring to the original descriptions, it seems clear that *P. apicalis*, Bp., must sink to a synonym of *P. porphyraceus*. Were it not for the words "rectricibus apice flavis," the diagnosis would suit *P. fasciatus* almost as well. The Samoan species is distinguishable at a glance; but the *Ptilinopi* of Tonga and Fiji appear to me barely, if at all, separable, though in Fijian specimens the green of the neck and shoulders seems less suffused with grey than in those from Tonga.—H. B. T.]

66. TURNIX VARIA, Temm.

We have heard of an indigenous Quail on some of the grassy uplands, but have not yet seen a specimen. *T. varia* has been several times introduced from Australia; M. Marie may have come across one of these imported birds, and hence included it in his list. Quails of some species were brought from Réunion in 1862, in the French frigate 'Ibis,' and turned out near Noumea. M. Jouan describes a Quail, "la même espèce qu'en Australie," as found on the uplands.

68. ESACUS MAGNIROSTRIS, Temm.

We have not yet heard of this species; neither is it included in the 'Revue.'

69. CHARADRIUS, sp.? G. R. Gray.

As regards this uncertain species we only know of

70. CHARADRIUS FULVUS, Gm.

Included as *C. xanthocheilus*, Wagl., by M. Marie. This L. L. found breeding on the islets off Anservata, close to Noumea.

72. TOTANUS INCANUS (Gm.).

We have just (20th December, 1877) obtained a single specimen (male) of this bird (the only one we have seen), shot by L. L. on the above-named islets. It differs somewhat from our Fijian-killed birds in having the bill shorter and thicker, and in having the feet and legs *ochraceous*, instead of *green*. According to Drs. Finsch and Hartlaub, and Cassin (U.S. Expl. Exped.), *T. incanus* (Gmel.) = *Gambetta pulverulentus*, Müller (Gould's Handb. B. Austr. vol. ii. p. 268). Gould (*loc. cit.*) says, "base of the lower mandible *scarlet*"! legs and feet "hyacinth-red" (Cassin does not notice the colour of these parts). We have never seen any thing like this coloration in the numerous specimens killed by us. Are there not several species mixed up under the numerous synonyms quoted by Drs. Finsch and Hartlaub?

73. LIMOSA UROPYGIALIS, Gould.

74. LIMOSA NOVÆ-ZEALANDIÆ, G. R. Gray.

Drs. Finsch and Hartlaub, in their 'Polynesian Ornithology,' speak of these as one species. We have only found, both here and in Fiji, what we take to be *L. uropygialis*, Gould.

NUMENIUS UROPYGIALIS, Gould.

Mr. Gray (B. Trop. Isl., p. 48) gives *N. tahitiensis* (Gould) as the New-Caledonian bird; and we have likewise so identified it. Our bird is identical with the Fijian, which we now think we have wrongly called *N. femoralis*. We hope shortly to transmit specimens to England for the inspection of our friend Mr. Harting.

77. HYPOTÆNIDIA PHILIPPENSIS, Gm.

Very abundant in the small island of Huon, to the north of New Caledonia. They rarely can be forced to take wing, and are caught in the grass by dogs. We have received several specimens alive.

78. ORTYGOMETRA TABUENSIS (Gmel.).

Porzana immaculata, Gould.

We have not yet seen it from this island.

79. ORTYGOMETRA CINEREA, Vieill., cited by M. Marie as *Zapornia leucophrys*, Gould, appears in the Lifu collection. A small Rail is said to be very abundant on the islands of Huon and Surprise, in addition to No. 77, which is there called a "Quail" or "Partridge"! It is probably this species, which is said (Gray's 'Birds of Tropical Islands') to be found also on the island of Tanna, the large southern island of the New-Hebrides group, which is distant only a few hours' sail.

81. PORPHYRIO MELANONOTUS, Temm.

82. PORPHYRIO BELLUS, Gould.

The only "Blue Gallinule" we have seen from here is undoubtedly identical with the species spread over the whole of the Fijian, Samoan, Tongan, and New-Hebridean groups, and which we cannot look upon as other than *P. vitiensis*, Peale. We pay no attention to difference of size, when unaccompanied by other distinctions; the scarcity or plenty of food may well account for discrepancies in this respect —"suitability of environment," in fact.

P. bellus, Gould, we have not got for comparison; but our collection contains *P. melanonotus*, and we have found nothing like it here.

BUTORIDES JAVANICUS (Horsf.).

If we mistake not, Messrs. Finsch and Hartlaub, in their 'Ornithologie' (p. 210), include this species as an inhabitant of New Caledonia.

87. ŒSTRELLATA ROSTRATA, Peale.

This is the common Petrel of the country. We know of several breeding-places, and have obtained young birds in various stages of plumage. Our list of these birds also includes

ŒSTRELLATA GAVIA (Forst.) (Gray, B. Trop. Is. p. 56), and
PROCELLARIA CÆRULEA, Gmel.,
both of which we believe we have seen close to the island in our voyages to Australia.

PUFFINUS BREVICAUDUS, Brandt; Gould, Handb. B. Austr. vol. ii. p. 459.

We have to thank Capt. North, of the schooner 'Effie Muckle,' running in the coasting trade here, for the addition of this and the following species to our avifauna. We only wish we could induce others "who go down to the sea in ships, and occupy their business in great waters," to interest themselves in our pursuit; they little know the interest they would derive from it, and how much they might benefit science.

The specimen noted was caught on the water at Honailou by some fishermen, and brought to us in alcohol (rum),—a male, in fine plumage. We suspect this is one of the Petrels that breed in holes on Huon Island.

THALASSIDROMA WILSONI, Keys. et Blas.

Of this a pair were seen, and one shot (and brought to us in alcohol by Capt. North), in the Wodin Pass, at the south end of the island, on the 21st of June last. A female in fine plumage.

88. LARUS NOVÆ-HOLLANDIÆ, Steph.

If this bird is rightly identified, it breeds on Huon Island;

a young bird from there is now running about within a few feet of us. But our birds have never more than *two* primaries with the white speculum on them. Is this a constant characteristic of *L. gouldi*, Bp.? We have seen no other Gull here, though M. Jouan mentions a larger species in his 'Notes.' Length 52 centims.

89. STERNA GRACILIS, Gould.

A specimen in the museum (locality unknown), marked "jeune femelle, mai," is in beautiful young plumage. We have little doubt that it was killed in the island, and probably was bred here. Our list of Terns includes, over and above those named by M. Marie,

STERNA BERGII (or VELOX), Licht.,
which we find not uncommon,

STERNULA NEREIS, Gould.,
which L. L. found breeding on some rocky islets off Ansevata,

ANOUS STOLIDUS, L.,
teste Finsch & Hartlaub (Orn. p. 327), and

GYGIS ALBA, Sparrm.,
Finsch & Hartlaub (Orn. p. 233).

96. PHAETON RUBRICAUDA (Gm.)
breeds on Huon Island, as does

98. TACHYPETES MINOR (Gm.),
a specimen we have agreeing entirely with the bird we thus identified in Fiji.

The Huon Islands have only just been opened up as guano-dépôt sites. We hear of various birds breeding there—two Rails, two Phaetons, two Frigate-birds, one (if not two) Boobies, two Terns, and two "Mutton-birds," "that burrow into the soil under the rocks."

The veteran zoologist Père Montrouzier believes the Frigate-bird to be new; and his description of it was read before the "Société de Géographie" in Paris on the 6th December, 1876, in a communication entled "Note d'histoire naturelle sur les îles Huon et Surprise, par le R. P. Montrouzier,' reprinted in the 'Moniteur de la N. Calédonie,' May 1877. He gives a list of the birds, reptiles, shells, insects, and plants observed by him. Of the first, he notices *Sula bassana, Tachypetes aquilus, Phaeton candidus, P. phœnicurus, Rallus pectoralis* ("dont les paillettes sont plutôt fauves que blanches, et dont la chair est d'un goût détestable"!!), "un Sterne noir-brun à calotte blanche," and the new (?) Frigate-bird, which he designates *Tachypetes chambeyroni,* and thus describes:—

"Taille de la Frégate commune, d'un noir-brun, plumes au-dessus du dos longues, irisées, à reflets métalliques; un volumineux jabot placé sous la gorge, pouvant se gonfler, d'un rouge de sang, garni à la base de quelques plumes rares, courtes, distantes, et de tuberculosités analogues à celle de la tête du Dindon."

[I have compared specimens from nearly every group, and feel satisfied that they must all be referred to *T. minor,* and that no third species of *Tachypetes* exists.—H. B. T.]

101. Anas superciliosa, Gm.

This is the only Duck we have yet seen; but Capt. Hutton, in his 'Catalogue of the Birds of New Zealand,' p. 36, adds to our avifauna

Querquedula gibberifrons, Müller.

This makes a total of twenty-three additions to M. Marie's list; and if we eliminate Nos. 35 and 69, to which no titles are given, we shall have a total of 127 species in our supposed avifauna—a number considerably in excess of that of Fiji as at present known to us.

106. Podiceps gularis, Gould.

M. Jouan describes a Dabchick (No. 53 of his 'Notes') which answers well to the Australian bird. One was shot while E. L. L. was at Honailou, but, unfortunately, was not shown to him till it appeared on the dinner-table! Its size answered to *P. gularis,* which we have from Australia; but not a feather could be found for identification.

An analysis of the genera of birds found in New Caledonia, Fiji, and Australia, gives us the following results:—

Genera common to New Caledonia and Australia, but not found in Fiji, 27 (this includes Waders and Sea-birds).

Genera found in New Caledonia and Fiji not found in Australia, 2.

Genera common to all three countries, 29.

Genera found only in New Caledonia, 6.

Genera found only in Fiji, 4.

Species common to New Caledonia and Australia, but not found in Fiji, 33.

Species common to Fiji and Australia, but not to New Caledonia, not one!

From this analysis it is evident that New Caledonia is essentially Australian. We have not materials enough yet to institute a proper comparison with the avifauna of the New Hebrides and other islands to the northward and eastward; but what little we have shows that it differs considerably from ours, and that this is probably the most easterly limit of the Australian avifauna.

XX.—*Notes on some Birds collected or observed by Mr. E. Leopold C. Layard in the New Hebrides.* By Messrs. E. L. Layard, and E. L. C. Layard. *With Remarks* by the Rev. Canon Tristram, F.R.S. &c.

The islands visited by Mr. Leopold Layard during his cruise through the New-Hebrides group consisted of Erromango, Vate, Ambrym, St. Bartholomew, Santo, Api, and Mallicolo. The major part of the collection was formed on Vate (or Sandwich Island), in the neighbourhood of Havanna Harbour, the time spent on some of the others having been too limited to do more than note such birds as were seen and fully recognized. The number of species of which examples were collected amounts to twenty-five, those seen and noted to thirty-eight. In the tabulated list appended the numerals indicate the numbers procured, the asterisk that the species was observed but not procured.

1. Circus, sp.?

A Harrier, resembling the Fijian species (*Circus approximans*), was seen questing over the grassy uplands and hillsides of Vate and Api, but was too wary to offer the chance of a shot.—L. L.

2. Urospizias, sp.?

A few small Hawks were also seen on Vate and Api, but very wild and scarce.—L. L.

[Probably *Urospizias torquata*, Temm., which I have received from Aneiteum.—H. B. T.]

3. Strix delicatula, Gould.

An Owl, undoubtedly of this widely spread species, flew over our heads one evening as we were concluding a game of cricket in the island of Vate.—L. L.

We have an idol, taken at Api, in the head of which is a tuft of feathers pulled from the wing of this white Owl.—E. L. L.

4. Halcyon sancta, Vig. & Horsf.?

This was observed, or procured, in all the places visited. It was not so common as in New Caledonia, but equally distributed in the forest, grass-land, and sea-shore, perhaps most in the forest. Bill black, with basal half of lower mandible white; legs ashy; iris dark brown.—L. L.

I cannot separate this Kingfisher from the New-Caledonian bird, though it is generally, I should say, larger, and has a more robust bill; but these characters differ in birds procured from the same localities, and vary with sex and age.—E. L. L.

[Mr. Layard has received a Kingfisher from Aneiteum, which he takes to be *H. juliæ*, but which is evidently of this species. No doubt *H. juliæ* is little more than a local representative of *H. sacra*, to which it is more closely allied than to *H. sancta*. It is less brightly coloured than the former, but has not nearly so green a hue as *H. sancta*. But the differentiating character is the dark chestnut necklet from the upper mandible encircling the occiput. This is equally remarkable in all stages of plumage. In all this group of

Halcyoninæ I observe that the under wing-coverts seem to grow pure white with age, while in immature birds they are more or less cinnamon-colour. I have received a large series of *H. juliæ* from Aneiteum, and also several specimens of *H. sancta* from the same place.—H. B. T.]

[*Note.*—Samoa. *Halcyon pealei*, F. & H. I have a solitary example of this bird from Tutuila, the only place where it is found in the Navigators' Islands, kindly procured for me by Mr. Whitmee. The sex was not marked; but I think it a female. Sharpe, I remember, unites this with *H. sacra*; and, except that it has more white about the head than that bird, I see no difference. In this species the under wing-coverts are *pure white*; in *Halcyon recurvirostra*, Lafr, in the male pale cinnamon, in the female just washed.

Tonga. *Halcyon sacra* ♂, ♀, et juv. Under-coverts entirely *pure white*. In my Fijian male the flanks, nuchal collar, and eyebrow are, more or less, cinnamon. In my Tongan male, adult, these parts are white, as in the female, while a young male shows traces of the cinnamon.—E. L. L.]

5. Collocalia uropygialis, G. R. G.

6. Collocalia leucopygia, Wall., and

7. Collocalia —— ?

These three Swiftlets were universally distributed on all the islands visited.—L. L.

Only three specimens were brought by L. L., one of each species. The first two accord well with New-Caledonian birds, which I identify as above. The third, and last, is like nothing that I have seen in Fiji, Samoa, or Tonga. It is larger and more robust than any I have from these places, and is of a uniform smoky dark drab, with no white patch on the rump. I feel sure that I saw a bird of this species pass over my head as I sat in a window of my present residence. A number of the common Swiftlet (*C. leucopygia*) were flying about; and as the bird in question passed I instantly detected its much larger size and square form, and the absence of the white uropygium. It appeared to me also that the shape of the tail, as it spread it, was different; but I had but a momentary glance of this. On seeing the bird brought from the

New Hebrides I immediately recognized that it was like the bird I had seen.—E. L. L.

8. Hirundo tahitica, Gmel.

Only six individuals of this Swallow were seen—one pair on Santo and two pairs on Vate, out of which last three birds were procured. These were in a maize-field, attracted by the insects put up by burning the grass. They perched on the tops of the stalks. In Santo they were on trees overhanging water. Bill and legs black; iris dark brown.—L. L.

Identical with the Fijian bird.—E. L. L.

9. Myzomela sanguinolenta (Lath.).

Scarce; the only one procured, and that too damaged by the shot to preserve, was killed on the summit of a cocoanut-tree. This is the favourite resort of the Fijian *M. gularis*. On Api and Mallicolo they were on "crotons" and the "kavika" tree. The planters said that when the "crotons" were in flower their gardens were full of the *Myzomela*.—L. L.

Identical with the New-Caledonian bird. The specimen above alluded to was brought to Noumea in spirits.—E. L. L.

10. Glycyphila flavotincta, G. R. Gray.

This "Honey-eater" was only seen on Vate, where it was very scarce and wild. It was frequenting a long trumpet-shaped yellow flower growing on the beach. Iris whity brown; bill and legs black.—L. L.

11. Zosterops griseinota, G. R. G.

This "White-eye" was found in pairs in the cultivated grounds. Iris bright brown; bill light black; legs ashy.—L. L.

This is certainly identical with the New-Caledonian species, but more robust.—E. L. L.

12. Zosterops flavifrons, G. R. Gray.

Found in small flocks, keeping to the forest. The planters say that both these "White-eyes" have become scarcer of late years, owing to the fact that they have taken to breeding in the cotton-fields, where the native labourers engaged in picking the cotton find their nests and destroy them. Iris dark brown; bill light black; legs ashy.—L. L.

I identify this bird with that described by the late Mr. G. R. Gray in the 'Cruise of the Curaçoa;' but the figure is coloured much too green on the back. The figure of *Z. siamensis* (Ibis, 1876, p. 350, pl. x.) much more nearly resembles our bird.—E. L. L.

13 & 14. MERULA —— ?

Two "Blackbirds" were seen:—a very dark one on Ambrym, which I thought resembled the Samoan bird, *T. vanikorensis*; and a brown one on St. Bartholomew, which more resembled in colour those I shot on Vanua Levu (*M. tempesti*, Layard). They had the usual "Blackbird" call and habits. —L. L.

15. MYIAGRA MELANURA, G. R. Gray.

This Broad-billed Flycatcher was distributed through all the islands visited. Their habits resembled those of the New-Caledonia birds. I found them more about the bush skirting the seashore than in the inland forest. Iris dark brown; bill ashy blue; legs and feet black.—L. L.

Among the specimens brought the Erromango bird has a conspicuously smaller bill, but is otherwise not distinguishable. The bill of the New-Caledonian bird, *M. viridinitens*, G. R. Gray, is just intermediate between the two; but that species can at once be separated from them by the white feathers in the tail, which in *M. melanura* are wanting. Canon Tristram (*loc. cit.*) alludes to "the rich chestnut" of the female. He has been led into error here by his correspondents. L. L. brought a female with the same black-coloured chest as the male; and the sexes of our allied *M. viridinitens*, G. R. Gray, are identical. The chestnut-chested bird is distinct; what it is I do not know, as L. L. only saw it. It is probably allied to, if not identical with, *M. caledonica*, G. R. Gray, in which both sexes, as in the Samoan *M. albiventris*, are chestnut; or it may be *M. vanicorensis*, Q. et G.—E. L. L.

[*Note.*—I have before me specimens of both the black- and the chestnut-breasted Flycatcher from Samoa, Fiji, New Caledonia, and New Hebrides. I have very possibly been led into error by my correspondents respecting the New-Hebrides birds. From Mr. Layard's remarks I have no doubt that what I assumed to be the female of *M. melanura* is a distinct species. I have carefully compared my three specimens with *M. albiventris*, Peale, from Samoa, and with *M. latirostris*, Gould, from Timor, and I cannot detect any difference. I have no doubt that Cassin is correct in uniting these latter (U.S. Explor. Exp. p. 149); and I venture also to include the New-Hebrides species. *M. rubecula* (Lath.) and *M. caledonica*, Bp., are very distinct.—H. B. T.]

16. MYIAGRA ——?

A chestnut-bellied *Myiagra* was seen on Vate; but my cartridge missed fire; and he never gave me a second chance at him.—L. L.

This was probably *M. vanicorensis*, Q. et G., which Mr. Gray ('Birds of Tropical Islands,' p. 17) gives from Vanicoro and Fiji. The Fijian bird, however, is separated by Verreaux under the name of *castaneiventris*, though united by Drs. Finsch and Hartlaub. It is much to be regretted that specimens of this species were not procured, that a comparison might have been instituted between it and the various red-bellied species from Samoa, Fiji, and New Caledonia, all of which are in our collection.—E. L. L.

17. PACHYCEPHALA CHLORURA, G. R. Gray.

This *Pachycephala* betrays its presence throughout the islands by its loud ringing note, reminding one of the Taviuni *P. torquata*, Layard. Like his cousins, he is shy and retiring, frequenting the densest bush, where he is more easily heard than seen. I sought one for nearly two hours before I shot him, being guided by his voice the whole while, and being not more than a dozen yards from him, he remaining motionless and unseen. Iris dark brown; bill black; legs and feet ashy.—L. L.

Male and female of this species were brought; the latter do not resemble their Fijian sisters in their dress, affecting brighter colours (yellow, white, and green) instead of the sombre red-browns of the latter. Our New-Caledonian bird, which much resembles this, is almost mute.—E. L. L.

18. Eopsaltria cucullata, G. R. Gray.

I came across an example of this species in Api, but was so close to it that, had I fired, I should have blown it to pieces; while I waited for a better chance it made off, and I saw it no more.—L. L.

19. Graucalus cinereus, G. R. Gray.

Frequents the high tree-forest in Mallicolo, St. Bartholomew, and Santo, but is not found, according to native testimony, on Api (which is in sight from Mallicolo), nor on Vate, in which latter place I sought for it without success, and the planters likewise did not know of it. The stomachs of those examined contained beetles. Iris yellowish white; legs, feet, and bill black.—L. L.

Identical with the New-Caledonian bird.—E. L. L.

20. Lalage banksiana, G. R. Gray.

This very beautiful Shrike was brought in by a native on Vate, mixed up with *Cuculus bronzinus*, some Doves and other small birds, and a couple of "Flying Foxes," all thrown together in a basket, covered with blood, and stinking of the big Bats. I had a hard job to wash the first two clean, but was amply rewarded for my trouble, this being the only one seen. The native said it had been shot in the bush along the sea-shore. Its stomach was full of small helices. Iris deep brown; bill, legs, and feet black.—L. L.

The colour of the underparts of this *Lalage* is a lovely warm yellow-ochre, far richer than depicted in the 'Cruise of the Curaçoa.' The wing-secondaries are also tinted, but not so deeply, with the same colour.—E. L. L.

21. Lalage ——?

Another *Lalage* I killed from a large tree overshadowing the house belonging to Capt. Macleod in "Sou'-west Bay," where I stayed some time. It was the only one I saw. Iris drab; bill, feet, and legs black.—L. L.

I have not been able to identify this species.—E. L. L.

22. Artamus melaleucus, Forst.

Found on Vate, Mallicolo, and Santo, frequenting the tops of high isolated trees, and selecting the bare topmost branches for their perches. Also on low bushes and *Pandanus* trees on the grassy uplands. Iris dark brown; bill ashy; feet and legs black.—L. L.

Mr. G. R. Gray ('Birds of Tropical Islands') does not include any species of *Artamus* from the New Hebrides. The species seems to me identical with the New-Caledonian race. E. L. L.

23. ERYTHRURA, sp. inc.

I saw a small flock of an Amadavat in the yam-gardens of a cannibal village on the mountains in the interior of the island of Vate. As I was creeping up to them one of my companions fired at a "Flying Fox," and startled them away. They were green and scarlet, like the New-Caledonian species *E. psittacea* (Gm.); but the scarlet seemed much brighter.—L. L.

24. TRICHOGLOSSUS MASSENA, Bp.

These Parrakeets are common on Vate, but difficult to procure on account of their wildness. They frequent the pawpan trees, devouring the fruit. On the little island of "Nguna," adjoining Vate, I found them on the cocoanut-trees. The *Erythrina* was not in flower at this season. They usually fly in small flocks, probably the members of one family. They feed very silently; and the first notice one usually has of their presence is the piercing scream they emit when they dart off from the tree to convey themselves to a safer locality.—L. L.

25 & 26. TRICHOGLOSSUS, spp. incc.

A Parrakeet was seen on Vate, Santo, and Api—a very small species, probably *T. palmarum*; and another in the centre of Santo, with a red breast, and about the size of *Lorius solitarius* of Fiji.—L. L.

27. CUCULUS BRONZINUS, G. R. Gray.

Seen or heard on all the islands, but very shy; the only specimen procured was the one mentioned above. Iris orange; bill black; legs and feet yellow.—L. L.

This bird resembles the New-Caledonian, but has a far more robust bill. Our bird is certainly migratory. Mr. L. Layard was in the New-Hebrides group from the beginning of June to the middle of July.—E. L. L.

28. Eudynamis tahitius (Gm.).

This Cuckoo was shot by a native on the banks of a river which we were descending, in Vate. Neither Mr. Young, with whom I was staying, nor the native seemed to know it. On Ambrym I saw a native with some tail-feathers of this species stuck in his "wool" as a decoration. Iris dark brown; bill dark brown; legs and feet green.—L. L.

29. Ptilopus greyi, G. R. Gray.

These lovely Doves were more abundant near Havanna Harbour (Vate) than elsewhere; on the other side of the island they were unknown to the resident missionary. There the Yellow-headed Dove (no. 30) was found; and it did not extend, in its turn, to the Havanna-Harbour side. The "Red-headed" Doves were generally scattered through the bush; the "Yellow-headed" frequented the banian trees, then in fruit, coming in flocks, but most wary in their habits and difficult to get at. Both species were in prime condition, covered with fat, rendering them doubly difficult to skin. Iris light orange; bill green; legs and feet maroon.—L. L.

30. Chrysœnas, sp. inc.

Erromango, Vate, and Ambrym were the islands where I procured this fine Dove. Its yellow head reminded me of that of the glorious "Orange Dove" of Fiji, or more so of the new species described by my father from Kandavu, *C. viridis*, Layard. I was especially pleased to get this bird, as, if I mistake not, Mr. Ramsay, the curator of the Australian Museum, showed me a specimen from Mallicolo, brought in alcohol by the surgeon of H.M.S. 'Pearl,' and which, he said, was a new and undescribed species. Iris buff; bill green; legs maroon.—L. L.

I cannot help thinking this bird comes very near the genus *Chrysœnas*, being intermediate between it and *Ptilopus*; but I have no diagnosis of its characters to which to refer. The apical termination of the first primary is more cut away than in *Chrysœnas*, but not so much as in *Ptilopus*.—E. L. L.

[*Note.*—No specimen of this bird has been sent by Mr. Layard.—H. B. T.]

31. CHALCOPHAPS CHRYSOCHLORA, G. R. Gray.

Found on all the islands. Habits the same as those in New Caledonia; frequents the ground in the bush. Iris dark brown; bill orange; legs maroon.—L. L.

32. CALŒNAS FERRUGINEA (Forst.).

Generally distributed in the thick bush, much frequent the ground, never go on high trees; when flushed they perch on branches near the ground. Feed on small seeds. Iris yellow; legs and feet red; bill black.—L. L.

33. CARPOPHAGA PACIFICA.

The large Fruit-eating Pigeon is abundant in all the islands. I shot it for the pot more than for skinning, and found it excellent eating. It was frequenting the banian, then in fruit. Native name "Oom," from its call.—L. L.

34. IANTHŒNAS HYPŒNOCHROA, Gould.

Also generally distributed, but not so abundant as the previous one. Feeds on banian. They were common in Erromango, but so reduced in flesh by the destruction of their food by the hurricane of the previous April as to be hardly worth shooting. The captain of the missionary ship 'Dayspring' informed me that shortly after the hurricane they came out of the forest in such numbers, seeking for food, that he shot twenty couple in a short time, as they perched about the mission walks and homestead. He, however, found them so poor that he gave over shooting at them.—L. L.

These Pigeons seem identical with the New-Caledonian species; the single specimen of the previous species brought is somewhat smaller than the Fijian race.—E. L. L.

35. MEGAPODIUS, sp. inc.* ?

Native name "Malou." Is getting very scarce in consequence of the rapid increase of pigs and tame cats that have taken to the bush. It is a very shy and wary bird, and is found only on the sides of deep densely wooded ravines, where it scratches about among the rocks for the worms, small helices, and little hard seeds that form its food. The natives among the New-Hebrides group tell me that in their islands the "Malou" deposits its eggs in a hole scratched under a rotten fallen log in the forest, and then covers them up with leaves. This account was confirmed by an intelligent missionary on the island of Sandwich, or Vate. In the Solomon Islands, however, I am assured by all the natives I have asked, white traders, and officers of H.M. ships, that the birds lay in the sand just above high-water mark. I hope to get to those islands myself next year. While staying on Vate I offered a large reward in beads, tobacco, and tomahawks to any native who would conduct me to a nest, so that I could get the eggs out with my own hands. Just two days after I left in the 'Dayspring' for the other islands, a man brought three eggs, fresh laid. He was told to come back again as soon as the vessel returned; but he did not, and I never saw a nest. The natives use the leg-bones of this bird for pipestems. I travelled to a place on the eastern side of Vate, where I was told there were still a few remaining. My host, who was just getting over a severe attack of fever and ague, could only take me to the edge of a ravine, and give me directions. I stole along carefully, just stepping from one rock to another, and every few yards stopping behind a tree to listen and reconnoitre. I must have walked a mile and a half up that gully, and could not have gone more circumspectly if I had been looking for gold. Twice, I was certain, I heard scratching among the dead leaves, but could see no birds. I could have had several shots at fowls run wild, but I was after nobler game. At length, as the bats were already flitting round my head, I thought it time to retrace my footsteps. I had not gone far when, with a hoarse croak, a dark object bounded over the bottom of the watercourse I was walking in. In the gathering darkness I could only see a black mass, like a stone, among the saplings. However, as I knew I could not get any nearer, I tried the choke-bore at it. The smoke hung round so that I could see nothing, and I heard no fluttering among the leaves; but when I went up to the place there lay my first "Malou," shot through the head and heart.

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* [The Megapode of the New Hebrides has been named *M. brazieri* (Sclater, P. Z. S. 1869, p. 529), from eggs obtained by Mr. Brazier at Vanua Lavu and Sandwich Islands.—EDD.)

A little further on I heard the scratching (sure sign!); but while cautiously peeping round a big tree, an envious rotten branch caught against my breast and broke with a loud snap, and I just got a glimpse of the "Malou" running like a racehorse over a slight elevation close by. Next day I was in a ravine so precipitous that I had to get into the summit of a big tree, and climb down that way. I had not gone far when I heard something that sounded remarkably like a "Malou." As before, I was in the bed of the watercourse. I looked all about the almost perpendicular sides: nothing to be seen; but the noise still continued; and at last, right in front of me, on a little pebbly bank, under a huge rock, I caught sight of two splendid "Malous," slowly retreating, and looking full at me. They were evidently old birds, in full breeding-plumage, their bare red heads and necks shining grandly in a gleam of sunshine; and they carried their absurd little tails stuck straight down between their legs. I was delighted at getting such a good look at so rare a bird, and tried to get both at one shot; but I have been "sold" too often by being too greedy, so knocked over the furthest one with a half-charge. The other one apparently vanished into thin air, as I saw nothing more of him. About a mile higher up the ravine I was startled by the hoarse cry of alarm, which appears to be the only sound these birds emit, and I could just see the bird's red head as he stared at me from behind a clump of rocks. I soon had the pleasure of handling him. My friend the planter was astonished at my success, and said that though he had resided there five years he had never got three birds in two days.

The natives on Ambrym and Espiritu Santo told me there were plenty about, and promised me both birds and eggs; but we stayed too short a time in each place to allow the novelty of the ship's presence to wear off, so that they could go and hunt. As I was stepping into the boat at Ambrym a native rushed up with one egg, and I gave him a stick of tobacco for it. The iris of this bird is dark brown; bill pale yellow; legs and feet bright yellow; claws horn-coloured, very long, curved, and flat on the underside.—L. L.

[*Note.*—No specimen forwarded. I have several eggs of a Megapode from Vate, sent by the Rev. J. Inglis.—H. B. T.]

The eggs brought from Vate are of a uniform red-brown, very thin shells, axis 3″ 7‴, diam. 2″ ; one is somewhat smaller than the other. That from Ambrym is a light fawn-colour, axis 3″ 3‴, diam. 1″ 11‴. Eggs from Savo resemble those from Vate in colour and shape; but the birds are said by those to whom I have shown the Vate birds to be much larger. —E. L. L.

36. Anas superciliosa, Gm.

I only once (on Santo) saw any wild fowl. There was one solitary Duck, which I took to be of this species, and two Sandpipers.—L. L.

I have *A. superciliosa* from Aneiteum.—H. B. T.

37. Strepsilas interpres (L.).

They certainly were not Golden Plovers (*Charadrius fulvus*), or *Totanus incanus*, with both of which I am very familiar. —L. L.

38. Sterna bergii, Licht.

The only thing in the shape of a Gull or a Tern was this widely spread species ; it seemed pretty generally distributed, but nowhere common. Amonst the islands I saw no Petrels, nor Gannets, nor Frigate-birds, nor Bo'swains.—L. L.

Respecting the new species of *Porphyrio*, I think my reverend friend will have to alter his opinion on comparing a series from the Fiji, Navagators', Friendly, and New-Caledonian Islands, such as I have now before me. I can make out no differences except in size. Of course with *P. indicus* it has nothing to do. I imagine that the species is identical in all the South-Sea Islands.

The nest, with the "pendent tail," resembling an inverted cone or jelly-bag, is surely that of a *Rhipidura*, all of which have, more or less, the "pendent tail."

I annex a table of the distribution of species, as observed by my son, in the New Hebrides.—E. L. L.

P.S. I should be glad to be allowed to correct an error, if I have not already done so. At p. 156 of 'The Ibis,' 1876, I stated that I had obtained *Anous cinereus* abundantly on coral islands to the N.E. of Madagascar. This, if not an error of the press, was a *lapsus calami* ; it should have been "*Sterna melanauchen.*"—E. L. L.

Distribution of Species in the New-Hebrides Group, as observed by Mr. L. Layard.

	Erromango.	Vate.	Ambrym.	Mallicolo.	St. Bartholomew.	Santo.	Api.
1. Circus, sp.	..	*	..	..	..	..	*
2. Urospizias, sp.	..	*	..	..	..	..	*
3. Strix delicatula, *Gould*	..	*	..	..	..	..	*
4. Halcyon sancta? *Vig. et Horsf.*	*	4	*	*	1	*	*
5. Collocalia uropygialis, *G. R. Gray*	*	1	*	*	*	*	*
6. —— leucopygia, *Wall.*	*	1	*	*	*	*	*
7. ——, sp.	*	1	*	*	*	*	*
8. Hirundo tahitica, *Gmel.*	..	3	..	..	..	*	
9. Myzomela sanguinolenta (*Lath.*)	..	1	..	*	..	..	*
10. Glycyphila flavotincta, *G. R. Gray*	..	2					
11. Zosterops griseonota, *G. R. Gray*	*	2	*	*	*	*	*
12. —— flavifrons, *G. R. Gray*	..	1					
13. Merula, sp.	..	..	*				
14. ——, sp.	..	..	..	..	*		
15. Myiagra melanura, *G. R. Gray*	1	4	*	*	*	*	*
16. —— caledonica? (vanikorensis?)	..	*					
17. Pachycephala chlorura, *G. R. Gray*	*	6	*	1	*	*	*
18. Eopsaltria cucullata, *G. R. Gray*	..	..	..	..	..	..	*
19. Graucalus cinereus (*Forst.*)	..	..	..	1	1	1	
20. Lalage banksiana, *G. R. Gray*	..	1					
21. ——, sp. inc.	..	1					
22. Artamus melaleucus? (*Forst.*)	..	7	*	..	..	*	
23. Erythrura, sp. inc.	..	*					
24. Trichoglossus massena, *Bp.*	..	5					
25. —— palmarum? *Forst.*	..	*	..	..	..	..	*
26. ——, sp. inc. (*Lorius?*)	..	..	..	..	..	*	
27. Cuculus bronzinus, *G. R. Gray*	*	1	*	*	*	*	*
28. Eudynamis tahitius, *Gmel.*	..	1	*				
29. Ptilopus greyi? *G. R. Gray*	..	9	..	1	..	..	*?
30. Chrysœnas, sp. inc.	1	1	1				
31. Chalcophaps chrysochlora	*	6	*	*	*	*	*
32. Calœnas ferruginea (*Forst.*)	1	2	*	*	*	*	*
33. Carpophaga pacifica (*Gmel.*)	*	2	*	*	*	*	*
34. Ianthœnas hypœnochroa, *Gould*	1	2	*	*	*	*	*
35. Megapodius, sp. inc.	..	4	*	..	..	*	*
36. Anas superciliosa, *Gmel.*	..	..	..	..	..	*	
37. Strepsilas interpres (*L.*)	..	..	..	..	..	*	
38. Sterna bergii, *Licht.*	*	*	*	*	*	*	*

XXI.—*Additional Notes on the Ornithology of Transvaal.* By THOMAS AYRES. Communicated by JOHN HENRY GURNEY[*].

[IN the volume of 'The Ibis' for 1877, at p. 491, I corrected an accidental error in the enumeration of the species of birds observed in Transvaal by Mr. Thomas Ayres. Since then I have detected a slight additional error, one species having been enumerated twice. This having been corrected, the number hitherto observed by Mr. Ayres stands as 281; and the additional species included in the following notes are numbered consecutively from that figure. Those species which are not numbered are such as have been previously mentioned.—J. H. G.]

AQUILA RAPAX (Temm.). Tawny Eagle.

Male, shot 12th July. Total length 26 inches, bill 2½, tarsus 3¾, wing 19½, tail 10½. Irides light tawny brown; bill black, gradually changing to pale yellowish-ash towards the base; cere, gape, and feet light chrome-yellow, claws black. Weight 5 lb.

This bird was brought to me by one of the Potchefstroom butchers; it frequented the slaughter-yard for some time, feeding on the offal of the cattle and sheep; its last meal consisted of some dead putrid fowl it had picked up, and my olfactories were sorely tried whilst skinning it. It is evidently a very foul-feeding bird; a horrible stench permeated its whole body, besides the musky smell noticeable also in the Vultures. This is the only specimen I have fallen in with for a long time.

[A typical specimen, assuming the adult dress on the head and mantle, but otherwise in immature plumage.—J. H. G.]

CIRCAETUS PECTORALIS, Smith. Black-breasted Harrier Eagle.

Female, shot 11th June, in full adult plumage. Irides light yellow; bill pale bluish horn-colour, darkest towards the tip; tarsi and feet dingy white. Weight 3½ lb.

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[*] See Ibis, 1877, pp. 339-354.

This species breeds at this season. A few days since a nest was found in a thorn tree, about eight miles from Potchefstroom, containing one egg, much incubated.

282. TINNUNCULUS CENCHRIS (Naum.). European Lesser Kestrel.

Male, shot 27th December, from a flight of about fifty birds.

[In immature plumage, but with a few adult feathers appearing on the mantle, throat, and upper breast.—J. H. G.]

CHICQUERA RUFICOLLIS (Swains.). African Rufous-necked Falcon.

Male, shot 29th May. Total length 12$\frac{3}{8}$ inches.

Female, shot 29th May; the mate of the above. Total length 13$\frac{7}{8}$ inches.

283. MELIERAX NIGER (Bonn. & Vieill.). African Black Hawk.

Male, shot 31st July.

This bird was given to me by my friend Mr. Rex, who shot it amongst some mimosa trees on the banks of the Vaal river, some four-and-twenty miles from Potchefstroom. It is an exceedingly scarce species in this country.

The following description was taken by me four days after the bird was killed:—Total length 13 inches, bill $\frac{3}{4}$, tarsus 2$\frac{1}{8}$, wing 7$\frac{3}{8}$, tail 6. Irides apparently bright-red hazel; bill black; gape, basal portion of bill, and cere bright dark orange-red; tarsi and feet bright brick-red, dashed with dusky brown on the upper surfaces; claws black.

[This specimen appears to me to be an adult but not very old male; the number of pale transverse bars on the middle rectrices is four.—J. H. G.]

Female, shot near Potchefstroom on the 19th of August by my brother, who noted down the following description at the time:—It was a solitary bird, and was found amongst low mimosa trees. Total length 14$\frac{1}{2}$ inches, tarsus 2, wing 8$\frac{3}{4}$, tail 7. Bill black, with the base red; tarsi and feet black, with the under surfaces orange-red; irides brown.

[This, I think, is evidently a younger bird than the preceding specimen; the pale transverse bars on the middle rectrices are five in number.—J. H. G.]

Female, shot on the 30th of July, in mimosa bush in the Rustenberg district, by my friend Mr. William Lucas, who gave it to me. Total length 13½ inches, wing 8¼. Irides dark red; cere orange-red; tip of bill dark horn-colour; tarsi and feet red, claws black. The throat contained the bones and flesh of a small bird.

[This is apparently a very fully adult bird, the black colour of the plumage being deeper and richer than in the two preceding specimens, and the light transverse bands on the middle rectrices being but three in number and only the central one reaching across the feather; they are also tinged with dark grey, instead of with brown as in the other two examples.—J. H. G.]

CIRCUS MACRURUS (Gmel.). Swainson's Harrier.

Male. Irides pale yellow.

Female. Irides dusky hazel.

[The above-named female appears to me to be adult; the male is decidedly so.—J. H. G.]

CIRCUS CINERACEUS (Mont.). Montagu's Harrier.

Male adult, shot 14th March. Irides bright gamboge-yellow.

This individual was exceedingly fat; and its stomach was crammed with grasshoppers.

CIRCUS RANIVORUS (Daud.). South-African Marsh-Harrier.

Male, adult. Total length 18¾ inches, bill 1⅜, tarsus 3½, wing 14½, tail 8¾. Irides pale gamboge; bill black, bluish at the base; cere greenish yellow; tarsi and feet light orange-yellow.

Female, adult, shot on the 25th of October from her nest, containing three chalky-white eggs very faintly tinged with grey. The nest was placed on a mass of thick sedges bent over the swamp, and about three feet above the water; it was composed partly of the sedge and partly of small sticks.

Total length 20 inches, bill $1\frac{1}{2}$, tarsus $3\frac{1}{2}$, wing 15, tail $9\frac{3}{4}$. Irides tawny yellow; bill and cere as in the male; tarsi and feet pale greenish yellow, with a dusky tinge. The crop contained the remains of a large rat.

Female, immature, shot 11th June. Irides dusky brown. The crop contained the remains of a Snipe, probably a wounded bird.

PHASMOPTYNX CAPENSIS (Smith). African Short-eared Owl.

Female, shot 24th May. Irides hazel.

Female, shot 2nd June. Irides dusky hazel-brown.

284. STRIX AFFINIS, Layard (ex Blyth). South-African Screech-Owl.

Female, shot 23rd January. Total length 13 inches, bill (fully) $1\frac{3}{8}$, tarsus $2\frac{3}{4}$, wing $10\frac{3}{4}$, tail $4\frac{3}{4}$. Irides dark hazel; bill pale flesh-colour, clouded more or less about the commissure; cere pale chrome-yellow; feet dusky.

The Screech-Owl is not uncommon in the town of Potchefstroom.

[The Screech-Owl of South Africa, though united by Mr. Sharpe, in his recent 'Catalogue of the Striges,' with *Strix flammea,* appears to me to be separable as a subspecies from the European race, from which it is distinguished (more or less conspicuously in different individuals) by the greater abundance and larger size of the dark spots on the entire under surface.

In my edition of Andersson's 'Notes on the Birds of Damara Land,' I applied to the South-African race the specific name of "*poensis,*" founded on a West-African specimen; but, according to the observations of Prof. Bocage ('Ornithologie d'Angola,' vol. i. p. 63), some West-African specimens occur which do not differ from those of Europe; and it may therefore be better to adopt for the South-African race the specific name of "*affinis,*" applied to it by Mr. Layard in the first edition of his work on the Birds of South Africa.

The present specimen differs from ordinary South-African examples in the very grey colouring of the mantle, in the larger size of the black spots on the sides of the neck, and also in the circumstance of the conspicuous black spots on the interscapular feathers being almost entirely free from the intermixture of white, with which these spots are usually varied both in *S. assimilis* and in *S. flammea.*

I may add that this last peculiarity is wanting in an otherwise very similar Transvaal specimen preserved in the British Museum, and described by Mr. Sharpe in his interesting paper on the Geographical Distribution of the Barn-Owls (*vide* 'Ornithological Miscellany,' vol. i. p. 289).

In the same paper Mr. Sharpe remarks that the Barn-Owl "does not seem to have been procured in Natal by Mr. Ayres or by any other collector." This, however, is not entirely accurate, as the Norwich Museum possesses an adult male obtained in Natal by Mr. Gueinzius. It is a bird of the ordinary South-African type, and does not present any remarkable peculiarities.—J. H. G.]

285. MEROPS SUPERCILIOSUS, Linn. Blue-cheeked Bee-eater.

Male, shot 12th April. Irides crimson; bill black; tarsi and feet pale dusky.

286. DICROCERCUS HIRUNDINACEUS (Vieill.). Swallow-tailed Bee-eater.

Male and female, shot 2nd June. Irides bright crimson; bill black; tarsi and feet greyish dusky.

This pair I shot in my garden amongst the fruit-trees; they appeared to sit stationary on a bough, and every now and then to dart upon any insect flying past that took their fancy. Their stomachs were well-filled with bluebottles.

These are the first birds of the kind I have seen in this part of the country.

287. HIRUNDO DIMIDIATA, Sundev. Pearly-breasted Swallow.

Male, shot in August in the Marico district, the first of these Swallows that I have met with in Transvaal.

HIRUNDO ALBIGULA, Bp. White-throated Swallow.

Irides very dark umber-brown; bill black; tarsi and feet dusky black. This is the first of the migratory Swallows to appear in Transvaal. One specimen sent was shot on the 16th of August, 1877, being one of the first individuals that arrived; the other specimen sent was shot on the 21st of January.

Hirundo rustica, Linn. Chimney-Swallow.

Male, shot 13th March.

Male, shot 3rd November, then in small flights.

[Both these specimens appear to be adult: that shot on 13th March is in full plumage, with the vinous tint on the underparts below the pectoral collar well developed; the other, killed on 3rd November, appears to be moulting, and is much less richly coloured both above and below, the absence of the vinous tint on the under surface being especially noticeable and almost complete; the external pair of rectrices are of the full length in both individuals.—J. H. G.]

Cotyle cincta (Bodd.). Brown-collared Martin.

Sex uncertain, shot at Potchefstroom, 19th April.

Anthoscopus capensis (Gmel.). Cape Dwarf Tit.

Shot 15th May, on the rocky ranges near Potchefstroom. Stomach contained a species of smooth-skinned caterpillar.

These birds are found on the scrubby hill-ranges, creeping and hopping actively about the leaves and tips of the mimosas.

Sylvietta rufescens (Vieill.). Short-tailed Bush-Warbler.

This species, according to my brother, is not at all uncommon in the Marico district; and Mr. Lucas found it plentiful in Swart-Ruggens and Rustenberg district.

Eremomela flaviventris (Burch.). Yellow-bellied Bush-Warbler.

Male. Total length $4\frac{1}{4}$ inches, bill $\frac{1}{2}$ (barely), tarsus $\frac{13}{16}$, wing $2\frac{1}{4}$, tail $1\frac{9}{16}$. Irides bright hazel; bill dusky, but rather pale on the under mandible towards the gape; tarsi and feet dusky, nearly black.

This species frequents the rocky ranges near Potchefstroom.

[The above measurements of the male bird are all, with the exception of the bill, a little larger than those of the female given by Mr. Ayres in 'The Ibis' for 1871, p. 153.—J. H. G.]

288. Phylloscopus trochilus (Linn.). British Willow-Warbler.

Two specimens sent: one shot 26th December, the other 28th March.

[I am indebted to my friend Mr. Henry Seebohm for permission to publish the following remarks with which he has favoured me respecting these two specimens:—

"The skin dated 26th December is, for the most part, in abraded plumage, but still shows the yellow underparts, which this species assumes in its autumnal moult before leaving its summer's quarters. Some of the primaries and tail-feathers have evidently been just renewed; but most of them are ragged and torn, especially at the ends.

"The other skin, dated 28th March, is in perfect plumage, with the pale tips to the primaries unabraded, and with the underparts of the pale yellow colour (almost white on the belly) which this bird shows when it reaches us in spring.

"These two skins seem to prove, what has been denied by many English ornithologists, that the Willow-Warblers moult in their winter quarters as well as before their departure from our shores."

The 28th of March seems to me to be a singularly late date for this species to be found still lingering so far south as Transvaal.—J. H. G.]

289. Sylvia salicaria (Linn.). Garden-Warbler.

Male, shot on the rocky ranges near Potchefstroom on 27th December, 1876, and two females, shot 10th January, 1877, also near Potchefstroom.

One of the females contained in the stomach portions and seeds of figs.

290. Acrocephalus schœnobænus (Linn.). British Sedge-Warbler.

Two specimens sent: one shot on the 10th, the other on the 18th of April; the stomach of the former contained delicate insects.

This species entirely inhabits the dense sedges of our swamps, where it hides pretty carefully, but towards evening appears a little more boldly, to feed amongst the sedges on the edges of the little rivulets.

[Other specimens of this Warbler from Transvaal have recently been acquired by the British Museum.—J. H. G.]

291. ACROCEPHALUS ARUNDINACEUS (Linn.). European Greater Reed-Warbler.

Acrocephalus fulvolateralis, Sharpe *.

Male, shot at Potchefstroom, 27th March. Total length 8 inches, bill 1, tarsus 1¼ (fully), wing 3⅜, tail 3. Head slightly crested; irides pale dusky hazel; bill dusky, excepting a considerable portion of the lower mandible, which gradually pales from the tip to the gape; inside of mouth bright orange-red; tarsi and feet pale ash-colour, soles of the feet very pale yellow. Stomach contained insects.

This is here the scarcest species of the genus; I have only occasionally seen them in the hedgerows of the town, principally among the low fig-trees, never amongst the reeds or sedges of the open country.

[The specimen sent is in moult, and agrees with the type of *A. fulvolateralis* in the British Museum; but Mr. Seebohm informs me that he does not consider the latter to be specifically distinct from the European *A. arundinaceus*; and, so far as I can judge, this opinion is well founded.—J. H. G.]

ACROCEPHALUS BÆTICATUS (Vieill.). Lesser South-African Reed-Warbler.

Female, shot 27th April. Irides pale ashy brown; bill pale, but dusky along the ridge and on the tip of the under mandible; tarsi and feet light yellowish ash-colour.

This little Warbler appears in the spring, and remains all through the summer. It is here now (23rd October), enlivening the place with its constant babbling. It appears to stick pretty much to the pollard willows in the hedgerows of the town; but it also frequents the rose-hedges and sometimes the reeds along the hedgerows. The numbers of insects which frequent the honey-dews on the pollard willows, for weeks together, appear to attract it. It is very retiring, and difficult to see amongst the dense foliage, where it sits and babbles for hours together. The hen bird has a short harsh note of alarm.

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* *Vide* 2nd edition of Layard's 'Birds of South Africa,' p. 280.

[Some remarks of Mr. Ayres in 'The Ibis' for 1865, p. 266, which were intended to apply to this species, have been erroneously referred by Captain Shelley in 'The Ibis' for 1875, p. 72, and by Mr. Sharpe in the second edition of Layard's 'Birds of South Africa,' p. 292, to *A. palustris.*

Mr. Seebohm has called my attention to the fact that this species comes exceedingly close to *A. dumetorum*, a native of Eastern Europe and of some parts of Asia, and has kindly furnished me with the following remarks on this subject :—

"At the first glance, *Acrocephalus bæticatus* seems to be the same bird as *A. dumetorum*; both are about the same size, the relative lengths of the wing-primaries are the same, and there is no difference in the respective lengths of the bastard primary or of the culmen. It is true that the colour of the upper part of *A. bæticatus* is more of a coffee-brown, whilst in *A. dumetorum* the colour is more of an olive-brown; but that is exactly what we might reasonably expect to be the difference between summer and winter plumage.

"The argument from the known facts of geographical distribution is all on the side of the identity of the two species. All the dated skins of *A. bæticatus* which I have seen were obtained in South Africa between October and April. *A. dumetorum* is found in Russia, from St. Petersburg to the Ural, from June to September; it also breeds in North Turkestan, in Siberia, and in the Himalayas, and it winters in the plains of India.

"I am inclined, however, to admit the distinctness of the two species. A careful examination and comparison of seventeen skins of *A. bæticatus* and twenty skins of *A. dumetorum* leads to the following results :—The colour of the upper parts of *A. bæticatus* is decidedly more of a coffee-brown than is the case with the skins of *A. dumetorum* in summer plumage, and perceptibly more so than is the case with the skins of the latter bird in winter plumage; in fact the difference in colour between these two birds is precisely the same in character as that between *A. streperus* and *A. palustris.* I find, also, that *A. bœticatus* is a trifle the smaller bird: my smallest measurement of length of wing is 2·18 inches, a second skin measures 2·2, four others 2·25, six others 2·3, one other 2·33, two others 2·38, one other 2·4, and the largest 2·48; in *A. dumetorum* my smallest measurement of length of wing is 2·33, two others measure 2·35, seven others 2·4, five others 2·45, one other 2·48, and the four largest 2·5. . . .

"The difference of the nesting-habits of the two birds, if verified by future observations (compare 'Ibis,' 1869, p. 291, with 'Stray Feathers,' 1875, p. 352), is additional evidence of their distinctness; and the fact of *A. bœticatus* breeding in Africa is strong evidence that it does not leave that country for this purpose."

In addition to Mr. Ayres's description of the nesting of *A. bœticatus,* referred to by Mr. Seebohm in the above remarks, some further notes on the same subject will be found in the second edition of Layard's 'Birds of South Africa,' p. 290.—J. H. G.]

BRADYPTERUS GRACILIROSTRIS (Hartl.). White-breasted Reed-Warbler.

This is the most plentiful of our Reed-Warblers, and the principal songster; it may be heard pretty constantly, and must be looked for almost only amongst the reeds bordering our rivers and small streams, being only now and then found amongst the sedges.

CISTICOLA CHINIANA (Smith). Kurichane Fantail.

This species frequents the rocky ranges near Potchefstroom; in its food it does not confine itself to very small insects.

Measurements of two males and three females:—

	Total length.	Wing.	Bill.	Tarsus.	Tail.
	in.	in.	in.	in.	in.
♂, shot 6th June	$5\frac{3}{4}$	$2\frac{1}{2}$	$\frac{5}{8}$	$\frac{7}{8}$	$2\frac{3}{4}$ (barely)
♂, shot in August	....	$2\frac{1}{2}$	$\frac{3}{5}$	$\frac{4}{5}$	$2\frac{7}{10}$
♀, shot April 23rd	....	2	$\frac{9}{16}$	$\frac{13}{16}$	(imperfect from moult)
♀, shot May 28th	$5\frac{1}{4}$	$2\frac{1}{8}$	$\frac{9}{16}$	$\frac{13}{16}$	$2\frac{1}{4}$
♀, shot June 6th	$5\frac{1}{2}$	$2\frac{1}{8}$	$\frac{9}{16}$	$\frac{3}{5}$	$2\frac{1}{2}$

[The difference in size between the sexes in this species appears to be more marked than in some of its congeners.—J. H. G.]

Cisticola cursitans (Frankl.). European Fantail.

Shot near Potchefstroom, 14th July.

At this season these birds are to be found frequenting swampy ground—in fact, among the Snipes; probably insects are now scarce in their usual dry haunts in the higher open country.

Aedon pœna (Smith). Smith's Chat-Warbler.

Male, shot 19th February, on the rocky ranges near Potchefstroom.

[This specimen is not fully adult, and is interesting as exhibiting some remains of immature plumage about the back of the head and neck, the lesser and median wing-coverts, and the lower part of the back. On all these parts the feathers belonging to the immature plumage are of a very pale fulvous tint, edged (and on the wing-coverts also centred) with blackish brown.—J. H. G.]

292. Saxicola pileata (Gmel.). Imitative Wheatear.

Male, shot 7th June, in open country near Potchefstroom. Stomach contained beetles and other insects.

Some of these birds are much bothered with ticks, that fasten themselves in numbers about the head and ears of the bird, which seems quite unable to get rid of them. How the bird can live with sometimes as many as twenty good-sized ticks sucking blood from its head and ears is a wonder.

293. Saxicola leucomelæna, Burch. Burchell's Wheatear.

Male and *female*. Female with a black head, its mate with a grey head; sexes ascertained by my brother, by whom the pair were shot, near Potchefstroom, in the month of August.

[So much uncertainty attaches to the variations of plumage in this Wheatear that it may be desirable to add a description of these specimens, and of two others that were sent with them:—

Male. Wing 4·6 inches, tail 2·5, culmen ·6, tarsus 1·2.

The whole plumage is of a deep lustrous black, with the following exceptions:—The entire crown of the head is dark grey, with minute blackish shaft-marks throughout, except upon the hinder part; the nape of the neck is of a similar grey, mingled with a few black feathers; the lesser wing-coverts are pure white, with the bases of the feathers black and expanding into conspicuous black centres on the exterior feathers round the carpal joint and for about three quarters of an inch below it; the scapular feathers adjoining the white coverts are edged with white on the exterior web, and in some instances on both webs; there is a small white spot near the edge of the wing and in a line with the origin of the bastard wing; the rump is white, but the lowest row of upper tail-coverts is black, with white bases and minute white tips: the tail has one of the outer rectrices imperfect and only showing a white base; the corresponding feather is entirely white except a black patch on each web near the end of the feather, that on the outer web being about twice as long as the other; the second pair (reckoning from the outside) are similar, but with the black patch on the inner web the larger of the two; the third and fourth pairs are also similar, but with the black patch extending along the whole of the inner web; the fifth pair are black, with only the base of the outer web white; the central pair are entirely black: the abdomen and crissum are white, slightly mingled with black; bill, legs, and feet black.

Female. Wing 4·7 inches, tail 2·7, culmen ·7, tarsus 1·2. In coloration this specimen only differs from the male in the following particulars:—The head is entirely a deep lustrous black, with no intermixture of grey; the small white spot near the root of the bastard wing is less conspicuous, being so small as to be hardly observable; the lowest row of upper tail-coverts have no white tips, but their white bases are larger than those in the male bird; some of the tibial feathers are also slightly tipped with white.

The distribution of black and white on the wings and tail is almost entirely identical in the two specimens.

A third specimen has the following memorandum attached to it by Mr. Ayres :—" Shot April 4th, on the rocky ranges near Potchefstroom ; sex by dissection uncertain ; contents of stomach, insects and seeds of wild fruits ; iris dusky ; bill, tarsi, and feet black." This bird measured, in the flesh, according to Mr. Ayres's note, as follows :—" Total length 8 inches, bill (from gape) $1\frac{1}{16}$, tarsus $1\frac{7}{16}$, wing $4\frac{3}{8}$, tail (barely) $3\frac{1}{4}$." In coloration this specimen resembles the female previously described ; but the black portions of the plumage are not so dark and much less lustrous, especially the crown of the head and the nape of the neck, and also the primaries and secondaries, all of which are dark brown rather than black ; the black centres of the white wing-coverts, and also the white spot near the origin of the bastard wing, are more conspicuous than in the last-named specimen, from which the present one likewise differs in the presence of a brownish-white mark extending from the base of the culmen to the eye and of a few very minute white specks just below the eye, also in some of the feathers of the back exhibiting very minute white tips and in the upper tail-coverts being wholly white ; there is also in this specimen a considerably less proportion of white on the abdomen above the tibiæ, the feathers on that part being black faintly tipped with white.

A fourth example, shot on the same day and in the same locality as the preceding one, has the following memorandum attached to it by Mr. Ayres :—

" *Female.* Total length $7\frac{7}{8}$, bill (from gape) $1\frac{1}{16}$, tarsus $1\frac{3}{8}$, wing $4\frac{3}{8}$, tail $3\frac{1}{8}$. Iris dusky ; bill, tarsi, and feet black."

This specimen is even more brown and less black than the preceding one, especially on the under surface ; but on the abdomen and tibiæ the feathers have blackish centres, concealed by brown or whity-brown margins ; the chin is sprinkled with small spots of a similar whity-brown tint ; but there is no whitish line between the bill and the eye, and no white on the wing, the feathers of the lesser coverts being blackish brown with brownish-grey edgings ; the upper tail-coverts and tail resemble those of the preceding specimen, except that all the rectrices, other than the two central pairs, are more uniformly and decidedly tipped with brown than is the case in the bird last described.

Mr. Sharpe has kindly examined these four specimens, all of which he considers to be referable to *S. leucomelæna*; but assuming this identification to be correct, I confess to feeling very doubtful as to whether *S. leucomelæna* and *S. monticola* are not, in reality, one and the same species.

I also observe that the white on the wing of all these specimens, except in the fourth (which is apparently a younger bird), is disposed in a manner exceedingly similar to the white coverts and adjacent small white spot in the wing of the Ash-backed Wheatear, for which I proposed the specific name "*tephronota*" in 'The Ibis' for 1877, p. 343, and that this is also a bird of very similar dimensions. I think it not unlikely that *S. tephronota* may ultimately prove to be merely a grey phase of the same species.—J. H. G.]

Budytes flava (Linn.). Grey-headed Yellow Wagtail.

Male, shot 3rd January.

Budytes rayi, Bon. Ray's Wagtail.

Male and female, shot 3rd January.

294. Monticola brevipes, Waterh. Short-footed Rock-Thrush.

Male and female, shot near Potchefstroom, in the month of August, by my brother, Mr. John Ayres.

[The sexes of this pair of birds appear to have been ascertained by Mr. John Ayres, having been marked by him on the tickets attached to them. The measurements of the two skins are as under:—

	Culmen.	Wing.	Tail.	Tarsus.	Middle toe, s. u.
	in.	in.	in.	in.	in.
♂ . . .	·75	4·4	2·5	1	·8
♀	·75	4·1	2·3	1	·8

The female specimen appears to be somewhat the older bird of the two, and agrees with the description of the male given in 'Contributions to Ornithology' for 1852, p. 147, but has the middle pair of rectrices blackish brown with ferruginous bases, the latter colour extending further on the sides of the feather than in the centre; the other feathers of the tail are ferruginous, but some of them are very slightly and irregularly edged with blackish brown on the outer webs towards the tips.

The male specimen differs from the female in having the crown of the head of a somewhat darker grey, and also in the rectrices (other than the central pair) showing more blackish brown on the outer webs, which is especially the case with the external pair.—J. H. G.]

PYCNONOTUS NIGRICANS (Vieill.). Brunoir Bulbul.

Male, shot 11th January, at Potchefstroom. Total length 8 inches, bill (from gape) $\frac{15}{16}$, tarsus 1, wing $3\frac{3}{4}$, tail $3\frac{3}{8}$. Irides bright reddish hazel; eyelids orange; bill black; tarsi and feet black. Contents of stomach, grapes.

Female, shot 18th May, at Potchefstroom. Irides bright reddish hazel; eyelids yellow; bill black; tarsi and feet very dark ash-colour, nearly black.

[The plumage of these specimens agrees with the description given under the head of *P. nigricans* in the first edition of Mr. Layard's work. In the female killed on the 18th of May, which had nearly moulted, the head is decidedly black; in the male killed on the 11th of January the plumage is worn and faded, and the head, though black, is slightly tinged with brown; but in neither specimen does the colour of the head agree with the description given in the second edition of Mr. Layard's book under the head of *P. capensis*.—J. H. G.]

295. LANIARIUS GUTTURALIS (Müll.). Bacbakiri Shrike.

Male in immature plumage, shot 23rd April, on the rocky ranges near Potchefstroom. Stomach contained locusts and grasshoppers.

ENNEOCTONUS COLLURIO (Linn.). Red-backed Shrike.

Male (adult), shot 26th December, on the rocky ranges near Potchefstroom.

Female, shot the following day, also on the rocky ranges.

296. JUIDA BICOLOR (Gmel.). White-rumped Grakle.

Male and female, shot at Potchefstroom, 10th January. Stomachs contained apple.

297. **Hyphantornis aurifrons** (Temm.). Golden-crowned Weaver-bird.

Male, shot at Potchefstroom, 8th January. Total length $7\frac{1}{2}$ inches, bill (from gape) $\frac{15}{16}$, tarsus $1\frac{1}{8}$, wing $3\frac{1}{2}$, tail $2\frac{1}{4}$. Irides pale tawny yellow; bill black; tarsi and feet pale yellowish. Stomach contained fruit.

Another male, shot at Potchefstroom, 28th January, from amongst a swarm of *Euplectes oryx*. Total length 7 inches, bill (barely) $\frac{15}{16}$, tarsus $1\frac{3}{16}$, wing $3\frac{5}{8}$, tail $2\frac{1}{4}$. Iris very pale chrome-yellow; bill nearly black, but greenish yellow at the base; tarsi and feet pale. Contents of stomach, figs.

[The specimen shot on the 8th of January appears to be in full breeding-plumage; but that killed on the 28th has the reddish-golden tint on the crown of the head interspersed with a few minute blackish-olive spots, which, with the colour of the bill, probably indicate that the bird was not in entirely complete breeding-dress when shot.

These two skins have been submitted to the examination of Mr. R. B. Sharpe, who has kindly informed me that he considers them to be referable to *H. aurifrons*.—J. H. G.]

Euplectes oryx, Swains. Greater Bishop Weaver-bird.

Male, in full winter dress.

I killed, at one shot, on the 8th of May, this bird and its female, whilst busily engaged in building a partially constructed nest, which it is very certain they would have had to leave, as the frosts of winter are now upon us, and, moreover, all birds here have assumed their winter garb.

Habropyga subflava (Vieill.). Sanguineous Finch.

Male, adult, shot at Potchefstroom, 15th June. Irides scarlet; bill crimson, with the ridge and gonys dusky; tarsi and feet light dusky brown. At this time of the year in numbers.

Immature, sex uncertain, shot 13th July. Irides light dusky tawny; bill black; tarsi and feet dusky ash-colour. In small flights.

Female, adult, shot 24th August. Irides pale scarlet; bill scarlet, but with the gonys, ridge, and a spot at the base of the upper mandible black; tarsi and feet pale dusky brown.

Male, adult, shot 23rd October. Irides bright scarlet; bill crimson, but dusky on the ridge and gonys; tarsi and feet dusky, pale. Contents of stomach, grass-seeds.

[In the immature bird, shot on the 13th of July, the bill is only about three quarters of the length of the bill in the adult.—J. H. G.]

Ortygospiza polyzona (Temm.). Little Barred-breasted Finch.

Female, shot near Potchefstroom, 6th April. Irides bright reddish hazel; upper mandible dusky brown; under mandible crimson; tarsi and feet pale.

Male, shot 30th April. Irides bright hazel; bill bright crimson; tarsi and feet pale.

This pretty little fellow I shot as he rose from the nest, where he was evidently doing duty for his wife, by sitting on the eggs in her absence. The nest was a very rough structure, placed on the ground amongst the grass and not easily seen, from its being composed of dead blades of grass; it was lined with a few coarse feathers, and in shape was much like the nests of some of the Sunbirds, with a projecting eave over the entrance, but all very rough. The eggs were five in number and pure white; length $\frac{17}{32}$ inch, breadth $\frac{15}{32}$.

298. Fringillaria vittata, Swains. Rock-Bunting.

Male, shot 20th February, at Potchefstroom. Total length $6\frac{3}{4}$ inches, bill (from gape) $\frac{7}{16}$, tarsus $\frac{15}{16}$ (barely), wing $3\frac{1}{4}$, tail $2\frac{7}{8}$. Irides dark hazel; bill dusky, the under mandible paler towards the gape; tarsi and feet dusky, soles of feet pale.

Female, shot 26th December, on the rocky ranges near Potchefstroom. Total length $6\frac{1}{4}$ inches, bill $\frac{1}{2}$, tarsus $\frac{15}{16}$, wing 3, tail $2\frac{1}{2}$. Irides dusky; bill dusky bluish horn-colour; tarsi and feet light dusky.

[Mr. Ayres has affixed to one of the skins sent the English name of "Rock-Bunting," which I have therefore retained. —J. H. G.]

299. Pyrrhulauda verticalis, Smith. White-crowned Finch-Lark.

Male, shot in August, in the Marico district.

Megalophonus erythrochlamys (Strickl.). Rufous-mantled Lark.

Two males, shot 2nd November, on the rocky ranges near Potchefstroom. Total length $7\frac{7}{8}$ inches and 8 inches respectively, bill (from gape) 1 and $1\frac{1}{16}$, tarsus $1\frac{3}{16}$ and $1\frac{1}{4}$, wing $4\frac{1}{8}$ and $4\frac{1}{4}$, tail 3. Rises a short distance, and utters a prolonged "whew" whilst descending. The stomach of one of these specimens contained insects.

Two females, one shot in the same locality and on the same day as the two males, the other on 20th June. Total length of one specimen $7\frac{1}{8}$ inches (the other bird not measured in the flesh), bill (from gape) in each about $\frac{7}{8}$, tarsus $1\frac{1}{8}$, wing $3\frac{5}{8}$ and $3\frac{7}{10}$ respectively, tail $2\frac{1}{2}$ in each.

Irides, in both sexes, light dusky hazel; bill dusky, but the under mandible pale; tarsi and feet pale brown.

Pterocles gutturalis, Smith. Sombre Sand-Grouse.

Male and female, adult, and female, immature.

I shot these three birds in company, on some peaty ground near the bank of the river, on the 21st November, at which season it is unusual to see them here. The three consisted, evidently, of an old pair with one young one about two thirds grown.

[The young bird, though not fully grown, is fully feathered, and resembles the adult female in coloration, though the transverse black and brown markings on the mantle are smaller and finer.—J. H. G.]

Coturnix communis, Bonn. European Quail.

Male, shot near Potchefstroom, 28th March, 1877.

Quails are here in great numbers at this time, and young birds three parts grown are often flushed.

300. Eupodotis caffra (Licht.). Stanley Bustard.

Female, shot near Potchefstroom, 14th May. Weight 9 lb. Total length $35\frac{1}{2}$ inches, bill (from gape) $3\frac{1}{4}$, tarsus $6\frac{3}{4}$, wing $18\frac{1}{2}$, tail $10\frac{1}{2}$. Irides light brown; bill dusky horn-colour, with the basal part of the lower mandible and the commissure pale bluish; tarsi and feet ochraceous white.

This bird was one of five which were feeding in an open valley. It was exceedingly fat, and the stomach was loaded with beetles and berries.

[Mr. E. C. Buxton, who met with this species in the course of a journey from Natal to the Labomba mountains, has favoured me with the following note respecting it:—"In the breeding-season the throat of the male is enormous, and it plays like a Blackcock. You may then see it a great distance; it looks snow-white, from its turning all its feathers inside out."—J. H. G.]

Ægialitis varia (Vieill.). Kittlitz's Plover.

Male, shot 22nd August.

This species migrates to this part of the country during the present month for the purpose of breeding; it is found sparsely in pairs, frequenting stony and tussocky ground where vegetation is scanty, and generally at no great distance from water; it disappears during the winter months. The stomachs of this bird and its mate (killed at the same time) contained insects, principally a species of white ant. From the size of the eggs in the ovary of the hen bird, I have no doubt she would have laid in a few days.

Ardea ardesiaca, Wagl. Lesser African Schistaceous Heron.

Male, adult, shot 21st February. Total length 20 inches, bill (from gape) $3\frac{3}{8}$, tarsus $3\frac{1}{2}$, wing (barely) 10, tail (barely) $3\frac{3}{4}$. Irides dusky hazel-brown; bill black; bare skin about the eye and base of bill black; tarsi and shanks black; feet gamboge-yellow, greenish just above the junction of the toes, claws black. Stomach contained remains of very small fish.

This beautiful Heron has a curious habit, whilst feeding, during the heat of the day and when the sun shines blazing hot, of throwing one wing suddenly forward and holding it out, so that it shades a small portion of shallow water; the bird immediately peers into the water searchingly, and invariably makes a dart at some unlucky little fish. In the specimen sent the tips of the primaries are worn; and without doubt this comes from the wing being so constantly thrown forward against rough grass and plants.

Ardeola comata (Pall.). Squacco Heron.

Male, shot 3rd January. Stomach contained grasshoppers.

301. Butorides atricapilla (Afzel). Black-capped Dwarf Heron.

Female, shot in August. Irides yellow, as is also the bare skin round the eye; the upper mandible of the bill black, the lower yellow and brown.

This species frequents trees on the banks of the River Marico.

Ardetta podiceps, Bon. Rufous-necked Little Bittern.

Male, immature, shot at Potchefstroom 3rd January. Total length $13\frac{3}{4}$ inches, bill from gape $2\frac{3}{8}$ [from culmen 1·65.—J. H. G.], tarsus $1\frac{7}{8}$, wing 5, tail $1\frac{7}{8}$. Irides pale greenish yellow; bill dusky along the ridge and commissure, elsewhere pale yellowish; tarsi and feet pale greenish yellow. Stomach contained grasshoppers.

[Mr. Ayres sends a second specimen, shot at Potchefstroom on the 29th of April by Mr. W. Lucas, who has marked it as a female; but it appears by its plumage to be a male just commencing the assumption of the adult dress. It measures as follows:—Bill from gape 2·2 inches, from culmen 1·65, tarsus 1·7, wing 5·1.—J. H. G.]

302. Ardetta minuta (Linn.). European Little Bittern.

Sex uncertain, shot at Potchefstroom, 18th February, 1872.

[This specimen was sent to me by Mr. Ayres soon after it was shot, and I then considered it to be an example of *A. podiceps*; but having recently carefully reexamined it, and compared it with other specimens, I believe it to be an adult female of the true *A. minuta*; and Mr. Sharpe, to whom I have submitted it, agrees with me in this opinion. Its principal measurements are:—Bill from gape 2·5 inches, from culmen 1·8, tarsus 1·7, wing 5·7.

The British Museum contains two South-African Little Bitterns, in similar plumage to this specimen, both of which appear from their dimensions to be referable to *A. minuta* rather than to *A. podiceps*. One of these was obtained in the Cape Colony by the late Sir A. Smith; the exact locality of the other is unknown.—J. H. G.]

NUMENIUS PHÆOPUS (Linn.). Common Whimbrel.

[Mr. Ayres has forwarded the specimen recorded in 'The Ibis' for 1877, p. 350; and I am therefore now able to confirm his identification of it.—J. H. G.]

TOTANUS GLAREOLA (Linn.). Wood-Sandpiper.

Female, shot 21st January, at Potchefstroom, amongst a flock of *Chera progne,* three of which were killed at the same shot. The stomach contained insects.

303. TRINGA MINUTA, Leisl. Little Stint.

Male, shot at Potchefstroom, 10th April.

Female, shot there, 23rd October.

[The male bird, shot on the 10th of April, is just commencing the assumption of its breeding-dress; the female, shot on the 23rd of October, has almost entirely lost it.—J. H. G.]

GALLINAGO ÆQUATORIALIS, Rüpp. African Snipe.

Female, shot 14th July.

I shot this bird in mid air, in the act of making that curious neighing noise with the rapid beat of the wings which, till then, I always thought was produced by the cock bird only.

These Snipes are now commencing to breed.

LIMNOCORAX NIGER (Gmel.). Black Crake.

Female, shot at Potchefstroom, 12th June. Total length 8½ inches. Irides bright crimson; eyelids rose-red; bill light greenish yellow; tarsi and feet deep rose-red.

The colours of the bill, tarsi, and feet are most beautifully vivid. All these beautiful little water-birds—Rails, Water-hens, &c.—seem now to be in tip-top plumage, uttering their quaint notes and chasing each other about amongst the reeds and sedges.

XXII. *A Synopsis of the Genus* Setophaga.

By Osbert Salvin, M.A., F.R.S., &c.

(Plates VII. & VIII.)

The genus *Setophaga* belongs to the American Passerine family Mniotiltidæ. One of its chief distinguishing characters is its broad Flycatcher-like bill and its strong rictal bristles, by which its likeness to the Flycatchers of the Old World is still further enhanced. The presence of nine instead of ten primaries, however, at once shows that the true relationship of *Setophaga* is with the American Mniotiltidæ, and not with the Old-World Muscicapidæ.

The position of *Setophaga* in the Mniotiltidæ is well defined by Professor Baird, in his 'Review of American Birds;' and I have no reason to dissent from the views there put forward, except as regards a few minor matters of detail which only relate to the grouping of the species together.

In this work Professor Baird divides the Mniotiltidæ into four subfamilies, the last of which he calls *Setophaginæ*, and in it he places all the broader-billed Mniotiltidæ—*Setophaga, Basileuterus, Myiodioctes,* and *Cardellina.* Of these genera, *Basileuterus* appears to be most nearly allied to *Setophaga.* In *Basileuterus* the bill is more pointed, and not so wide at the base in proportion to its length; the rictal bristles are not so well developed, and as regards coloration the tail is always uniform in tint instead of having the outer feathers more or less white on their proximal or distal halves.

Setophaga is a genus having fairly definite characters. It was first characterized by Swainson, in 1837, in the third volume of the 'Zoological Journal' (p. 360). Although he states that he knew five members of the genus, inhabiting the temperate regions of America, Swainson only mentions one by name—*Muscicapa ruticilla,* of Linnæus—which, therefore, must be considered the type of the genus. The same species was subsequently (1832) selected as the type of his genus *Sylvania* by Nuttall, in his 'Manual of Ornithology' (i. p. 291)*.

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* In the second edition of his work Nuttall used this name in a different sense, applying it to the birds now placed in the genus *Myiodioctes.*

The type species, *S. ruticilla,* stands somewhat apart from the other members of the genus; and this difference has suggested some division in the whole group. Thus, in 1850, Dr. Cabanis (Mus. Hein. i. p. 19) introduced the name *Euthlypis* for *E. lacrymosa,* and Prof. Baird, in 1865, in his 'Review of American Birds,' proposed to divide the genus into three subgenera—*Setophaga, Myioborus,* and *Euthlypis*—the type of *Myioborus* being *M. verticalis,* and with it were associated by far the majority of the species.

This arrangement of Professor Baird's seems to me to give a fair idea of the relationship that exists between the species, and I agree with him in thinking that the differences seen are of subgeneric rather than of generic value.

The synonymy of the genus therefore stands thus:—

(1827) *Setophoga,* Swains. Zool. Journ. iii. p. 360. Type *S. ruticilla.*

(1832) *Sylvania,* Nuttall, Man. Orn. i. p. 291. Type *S. ruticilla.*

(1850) *Euthlypis,* Cabanis, Mus. Hein. i. p. 19. Type *S. lacrymosa.*

(1865) *Myioborus* (as a subgenus), Baird, Rev. Amer. B. pp. 237, 257. Type *S. verticalis.*

I recognize fifteen species of *Setophaga,* specimens of all of which I have before me. They may be arranged as follows:—

A. Sexus dissimiles: alis longioribus; rostro debili, rectricum lateralium apicibus nigris; speculo alari rubescente; ventre albicante. (*Setophaga.*) 1. *ruticilla.*

B. Sexus similes: alis brevioribus, magis rotundatis; rostro debili; rectricibus lateralibus fere totis aut in parte terminali late albis. (*Myioborus.*)

  a. Supra nitenti-nigra; speculo alari late albo; abdomine coccineo........................ 2. *picta.*

  b. Supra schistacea aliquando olivaceo tincta; speculo alari nullo.

    a'. Mento et gula nigricantibus:

      abdomine rubro .... 3. *miniata.*

      abdomine aurantiaco .... 4. *aurantiaca.*

      abdomine flavo .... 5. *verticalis.*

    b'. Corpore subtus omnino aureo-flavo.

      a''. Pileo toto nigro, oculorum ambitu flavo .. 6. *melanocephala.*

b''. Pileo toto castaneo, ciliis albis:
dorso medio olivaceo; rectrice extima fere omnino alba .... 7. *brunneiceps.*
dorso toto fusco-brunneo; rectricis extimæ intus dimidio basali fusco .... 8. *castaneocapilla.*
c''. Pileo postico nigro, antico (fronte incluso) flavo .... 9. *chrysops.*
d''. Pileo flavo, fronte et oculorum ambitu albis................................ 10. *ornata.*
e''. Pileo castaneo, fronte et oculorum ambitu flavis .... 11. *ruficoronata.*
f''. Pileo castaneo nigro circumcincto.
genis nigris; torque pectorali nullo,
oculorum ambitu et loris flavis .... 12. *bairdi.*
oculorum ambitu et loris albis .... 13. *albifrons.*
genis flavis; torque pectorali fusco........ 14. *torquata.*
C. Sexus similes: statura majore; alis rotundatis; rostro magis elongato, robustiore; cauda nigricante, rectricibus omnibus plus minusve albo terminatis. (*Euthlypis.*) .... 15. *lacrymosa.*

In their geographical distribution the members of *Setophaga* are almost wholly confined in North America to the highlands of Mexico and Central America, and in South America to the Andes, from Columbia to Bolivia. The sole exceptions are:—*S. ruticilla,* which, passing the summer in Eastern North America and the winter between the equator and the tropic of Cancer, is a strictly migratory species; and *S. castaneocapilla,* which is peculiar to the highlands of British Guiana. To these may be added *S. albifrons,* which is restricted to the isolated highlands of Merida, in Venezuela. In the country north of the isthmus of Panama we have three species peculiar to Mexico, the territory immediately north of it, and Guatemala, viz. *S. picta, S. miniata,* and *S. lacrymosa*; and in Costa Rica and Veragua, *S. aurantiaca* and *S. torquata.* In the United States of Columbia *S. chrysops, S. ornata, S. ruficoronata,* and *S. verticalis* occur. In Venezuela, besides *S. albifrons,* already mentioned, *S. verticalis* is found; in Ecuador, *S. verticalis, S. ruficoronata,* and *S. bairdi*; in Peru, *S. verticalis* and *S. melanocephala*; and in Bolivia, *S. verticalis, S. brunneiceps,* and *S. melanocephala.* It will thus be seen that the majority of the species have a very restricted range, and that the genus is wholly unrepresented in South-eastern Brazil, the valley of the Amazons, and in all the low-lying forests of South America where the temperature is high, also in the West Indies, except so far as regards *S. ruticilla*.

1. SETOPHAGA RUTICILLA *.

Muscicapa ruticilla, Linn. Syst. Nat. i. p. 326; D'Orb. La Sagra's Hist. Fis. Polit. y Nat. de Cuba, *Aves*, p. 73.

Setophaga ruticilla, Sw. Zool. Journ. iii. p. 358; Cab. Schomb. Guian. iii. p. 66; Gosse, B. Jam. p. 164; Scl. P.Z.S. 1854, p. 111, 1855, p. 144, 1856, p. 292, 1859, p. 374, 1860, p. 84, & 1864, p. 172; Cab. J. f. Orn. 1856, p. 472; Sallé, P. Z. S. 1857, p. 23; Scl. & Salv. Ibis, 1859, p. 12, et P. Z. S. 1864, p. 347; Newton, Ibis, 1859, p. 143; Bryant, Proc. Bost. Soc. N. H. vii. p. 111; Gundl. J. f. Orn. 1861, p. 326; Lawr. Ann. Lyc. N. Y. vii. p. 322, viii. p. 175, ix. p. 96, et Bull. U.S. Nat. Mus. no. 4, p. 16; Baird, Rev. Am. B. p. 256; Salv. P. Z. S. 1867, p. 136, & 1870, p. 183; Finsch, P. Z. S. 1870, p. 565; Wyatt, Ibis, 1871, p. 323; Scl. & Salv. Nomencl. p. 10.

Motacilla flavicauda, Gmel. Syst. Nat. i. p. 256.

? *Figuier noir et jaune de Cayenne*, D'Aub. Pl. Enl. 391. f. 2, undè

Motacilla tricolora, Müll. Natursyst. Suppl. p. 175, et

Motacilla multicolor, Gmel. Syst. Nat. i. p. 972.

Mas nitenti-purpurascenti-niger; corporis lateribus, subalaribus, speculo alari et caudæ rectricibus quatuor externis utrinque ad basin rufo-aurantiis, ventre et crisso albis, hoc medialiter nigro: long. tota 4·5, alæ 2·5, caudæ 2·4, tarsi 0·7.

Fem. supra olivascenti-grisea, subtus albida; subalaribus, speculo alari et caudæ basi (nisi in quatuor rectricibus mediis) flavido-aurantiis.

Hab. Eastern and middle provinces of North America in summer; Antilles, Mexico, Central America, Columbia, Ecuador, Venezuela, and Guiana in winter.

Mus. nostr. et P. L. S.

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* For general references respecting this species in North America, consult Baird, Brewer, & Ridgway, N.-Am. B. i. p. 291; Coues, B. N.-West, p. 81; and Henshaw, Wheeler's Exp. Zool. v. p. 209.

This well-known species is the only migratory member of the genus, residing in the United States in summer, where it breeds, and passing the autumn and winter months within the tropics. During the latter season it has been observed in most of the West-India islands, the Bahamas, Cuba, Jamaica, St. Domingo, St. Thomas, St. Croix, and Trinidad; and its range on the continent extends southwards to about the line of the equator. In Guatemala, where I observed it, birds made their appearance about the beginning of September and remained in the country till the middle of March.

The line of the southward migration of the species tends rather to the westward, and thus follows the course of many other migratory species. This is shown by its presence at Mazatlan in winter, whereas it is unknown in Western North America during the summer.

Its range in altitude during the winter is great; for I found it at the sea-level both on the Atlantic and Pacific sides of Guatemala, and as high as 8000 ft. in the mountains of the interior.

As seems to be the case with migratory species in general, little or no variation is noticeable in individuals of *Setophaga ruticilla*. Tendencies to vary seem kept in check by the intermingling of individuals during the great annual movement of the species.

2. SETOPHAGA PICTA.

Setophaga picta, Sw. Zool. Ill. ser. 2, i. pl. 3; Scl. P. Z. S. 1856, p. 292, 1858, p. 299, & 1859, p. 374; Scl. & Salv. Ibis, 1859, p. 12; Baird, Rev. Am. B. p. 256; Lawr. Mem. Bost. Soc. N. H. ii. p. 270, et Bull. U.S. Nat. Mus. no. 4, p. 16; Scl. & Salv. Nomencl. p. 10; Henshaw, Wheeler's Exp. Zool. v. p. 209.

Muscicapa leucomus, Giraud, B. Texas, pl. 6. f. 1; Scl. P. Z. S. 1855, p. 66.

Mas nitenti-niger; macula supra et infra oculos, tectricibus alarum mediis et majoribus, secundariorum marginibus, subalaribus, ventre imo et crisso albis; abdomine medio coccineo; rectrice extima utrinque fere omnino alba, proximæ parte basali nigra, tertia albo terminata, reliquis omnino nigris: long. tota 5·0, alæ 2·6, caudæ 2·5, tarsi 0·7, rostri a rictu 0·55.

Av. horn. sordide nigra; abdomine albido sordide brunneo maculato.

Hab. Mexico and Guatemala, and northwards to Arizona.

Mus. nostr. et P. L. S.

Originally described by Swainson from a specimen sent to Mr. John Taylor from Real del Monte, in Mexico, this species extends throughout the Mexican highlands from Mazatlan to the Gineta Mountains, being met with at many intermediate points, such as Cordova, La Parada, and Cinco Señores. In Guatemala it has also a wide range in the oak forests of the highlands. It is common in the Volcan de Fuego, between 7000 and 9000 ft. above the sea. It is also to be found at many points on the mountain-range which forms the northern edge of the valley of the river Montagua. Here Mr. Godman and I met with it above the villages of Chol, San Geronimo, and Santa Barbara; also in the higher district of Chilasco, and near Tactic in Vera Paz.

This is a conspicuous species, soon attracting attention by its restless movements amongst the branches of the forest trees and by its habit of opening its tail to exhibit the white tips of the rectrices.

Prof. Baird remarks (Rev. Am. B. p. 257) that he had never seen an authentic female of this species. Neither have I; but a specimen which I believe to belong to that sex hardly differs from the male, the colour of the breast being only somewhat less brilliant in tint. And on this point Mr. Henshaw's observations are conclusive; he says that the sexes differ little, the female being merely perceptibly duller throughout.

From Mr. Henshaw's remarks, *S. picta* appears to breed in Southern Arizona and to migrate southwards in winter; the dates when his specimens were obtained range from the 20th of July to the 25th of September. In Guatemala, I believe, it is found throughout the year; and as we have a Guatemalan specimen in first plumage, the species must breed in that country, though I have no further positive evidence of the fact. As it does not occur beyond the southern limits of Guatemala, the movement southwards of the Arizona birds crowds the individuals together during the winter season; and thus the migration is only partial as regards the members of the species in general.

3. SETOPHAGA MINIATA.

Setophaga miniata, Sw. Phil. Mag. 1827, p. 368; Scl. P. Z. S. 1856, p. 292, 1858, p. 299, 1859, p. 362, & 1864, p. 374; Baird, B. N. Am. p. 249, pl. 58. f. 1 (1858), et Rev. Am. B. p. 259; Lawr. Mem. Bost. Soc. N. H. ii. p. 270, et Bull. U.S. Nat. Mus. no. 4, p. 16.

Muscicapa larvata, Licht. Preis-Verz. mex. Vög., *cf.* Journ. f. Orn. 1863, p. 58.

Muscicapa vulnerata, Wagl. Isis, 1831, p. 529.

Setophaga vulnerata, Bp. Consp. i. p. 313.

Setophaga castanea, Less. Rev. Zool. 1839, p. 42.

Muscicapa derhami, Giraud, B. Texas, pl. 3. f. 2; Scl. P. Z. S. 1855, p. 65.

Setophaga flammea, Kaup, P. Z. S. 1851, p. 50; Scl. & Salv. Ibis, 1859, p. 12; Scl. Cat. Am. B. p. 37; Baird, Rev. Am. B. p. 259.

Setophaga intermedia, Hartl. Rev. Zool. 1853, p. 3.

Supra ardesiaca; alis, uropygio et cauda nigricantibus; fronte, loris, verticis lateribus et gula tota nigris, vertice ipso læte castaneo; subtus abdomine toto coccineo, subalaribus et crisso albis; caudæ rectricibus tribus externis gradatim albo terminatis, rostro et pedibus nigris: long. tota 5·4, alæ 2·6, caudæ 2·9, tarsi ·73.

Hab. Mexico and Guatemala.

Mus. nostr., P. L. S., Derb., Acad. Cantabr.

Guatemalan examples of this species are often of a more orange-red beneath than Mexican individuals; and for such examples the synonyms *S. flammea* and *S. intermedia* have been proposed. Comparing specimens of the same sex from the two countries, killed at the same time of year (January), no such difference is perceptible; nor can I see any difference in the intensity of the black of the head and throat, a character which has been used to differentiate the Guatemalan from the Mexican bird. The only difference that

I can trace between the two is that the tail of the latter is somewhat longer than that of the former, and that the amount of white on the lateral rectrices of the Guatemalan bird is not quite so great as on that of the Mexican. A series, however, of Guatemalan examples (including Kaup's type) shows that in that country, at least, the white of the tail is of variable amount, the more orange-breasted specimens (the form described by Kaup, and apparently by Hartlaub) having less white than others of more highly-coloured plumage. These differences are so slight that I think it best to reunite the Guatemalan and Mexican birds.

As regards the other synonyms given above, Wagler's name, *M. vulnerata*, no doubt applies to *S. miniata*; for though Wagler says his is very near to Swainson's species, he omits to say how they differ. *Muscicapa larvata* of Lichtenstein, *S. castanea* of Lesson, and *Muscicapa derhami* of Giraud seem to have been proposed by their authors without any reference to the work of their predecessors, and doubtless in ignorance of their labours.

It will be observed that Swainson, in his original description, omits to mention the chestnut crown so conspicuous in this species. An examination of the type, now in the University Museum at Cambridge, shows it to be a young bird, in which this feature is barely perceptible. There can be no doubt that it belongs to the species usually called *S. miniata*.

The range of *S. miniata* extends over a wide area. Swainson's original specimen came from near Valladolid, in the tableland of Mexico; but the species is also found much further to the north-west in the Sierra Madre, near Mazatlan, where Col. Grayson met with it.

Its presence in many parts of Southern Mexico has been also recorded, such as the vicinity of the city of Mexico, Zapotitlan, Orizaba, Jalapa, La Parada, Cinco Señores, and Totontepec. In Guatemala we found it nearly everywhere in the oak region—near Quezaltenango (8000 ft. above the sea), in the forests of the Volcan de Fuego, at Carrizal (5000 ft.), Chilasco (about 6000 ft.), and Coban (4300 ft.).

Like *S. picta*, it is a restless species, constantly searching for its food amongst the leaves and branches of the oak trees it frequents. It seems to be a resident species, as we found it at nearly every season of the year—in January, July, September, and November.

4. SETOPHAGA AURANTIACA.

Setophaga flammea, Cab. J. f. Orn. 1861, p. 85 (*nec* Kaup).

Setophaga aurantiaca, Baird, Rev. Am. B. p. 261; Lawr. Ann. Lyc. N. Y. ix. p. 96; Salv. Ibis, 1869, p. 313, et P. Z. S. 1870, p. 183; Scl. & Salv. Nomencl. p. 10.

Supra schistacea; fronte, capitis lateribus, gula tota et cauda nigricantibus; plaga verticali castanea; abdomine toto aurantio-flavo, crisso albo; rectricis utrinque extimæ dimidio apicali albo, duabus quoque utrinque proximis albo terminatis; long. tota 5·3, alæ 2·6, caudæ 2·5, tarsi 0·7.

Av. horn. fusco-nigra; abdomine medio fulvescente.

Hab. Costa Rica and Veragua.

Mus. nostr. et P. L. S.

This is a close ally of *S. verticalis*, which it replaces in the highlands of Veragua and Costa Rica. It differs chiefly in having the underparts orange rather than lemon-yellow. There is also a difference in the amount of white in the outer rectrices between the two species, these feathers in *S. verticalis* having much more white than those of its ally; the dark markings of the head of *S. aurantiaca* seem to be blacker than in the other species. At one time I somewhat doubted there being two species of this form; but having since seen a large number of examples of both, all showing the constant differences pointed out above, I now think that their separation is justifiable. This, indeed, was the view taken by Mr. Sclater and myself when compiling our 'Nomenclator.'

As regards the bird called *S. flammea* by Dr. Cabanis, there can be no doubt that it really belongs here. This was apparent when I examined the specimen in the Berlin Museum.

It would appear that *S. aurantiaca* is a common species in the highlands of Costa Rica, as specimens occur in almost all of the collections made in that country, it having been obtained in the Dota Mountains, near San José, Barranca, Turrialba, Tucurriqui, and in the forests of the Volcano of Irazu. From Veragua we have also received specimens, chiefly from Chiriqui and Calovevora.

5. SETOPHAGA VERTICALIS.

Setophaga verticalis, D'Orb. & Lafr. Syn. Av. p. 50; D'Orb. Voy. Ois. p. 330, t. 35. f. 1; Tsch. Faun. Per. p. 191; Scl. P. Z. S. 1855, p. 144, 1859, p. 137, & 1860, p. 84; Baird, Rev. Am. B. p. 258; Scl. & Salv. P. Z. S. 1868, p. 166, 1873, p. 185, 1876, p. 16, et Nomencl. p. 10; Wyatt, Ibis, 1871, p. 323.

Myioborus verticalis, Tacz. P. Z. S. 1874, p. 508.

Supra schistacea; fronte, capitis lateribus, gula tota et cauda nigricanti-cinereis, plaga verticali castanea; abdomine toto flavissimo, crisso, rectrice utrinque extima et reliquis (duabus mediis exceptis) gradatim albis; rostro et pedibus nigris: long. tota 4·75, alæ 2·4, caudæ 2·3, tarsi 0·7.

Hab. Bolivia, Peru, Ecuador, Columbia, and Venezuela.

Mus. nostr. et P. L. S.

This species has the widest range of all the members of the genus except the migratory *S. ruticilla*. It was originally discovered by D'Orbigny in the Province of Yungas, in Bolivia, whence also we have recently received specimens from Mr. Buckley shot near Tipuani, in the same province. In Peru it would appear to be common in the highlands, where Tschudi met with it; as also did Whitely at San Antonio, Huiro, and Potrero; and Jelski at Monterico, Montaña de Vitoc, and Montaña de Ropaybamba. In Ecuador, Fraser found it at Pallatanga, Perucho, and Puellaro; and Mr. Buckley has sent us skins from Jima. It has long been known to exist in the neighbourhood of Bogota; and more recently Mr. Wyatt has found it at various points in the Andes to the east of Magdalena (Alto, Santa Rosa, Canuto), in the forest, at an altitude of from 5000 to 7000 ft. Lastly, Mr. Goering's collections from Caripé contained examples. On the isthmus of Panama the mountains are too low to suit its habits, and here its northern range terminates; for in the mountains of Veragua and Costa Rica the closely-allied *S. aurantiaca* takes its place.

I have compared specimens from all the localities above mentioned, and find little or no variation in individuals from most distant points of the range of the species. The yellow colour of the under surface is quite uniform, one of the characters by which its northern representative may be recognized—*S. aurantiaca* having the belly of an orange- instead of a lemon-colour, the tint of this part in *S. verticalis*.

6. SETOPHAGA MELANOCEPHALA.

Setophaga melanocephala, Tsch. Wiegm. Arch. Jahr. x. vol. i. p. 276, et Faun. Per. p. 192, t. 12; Kaup, P. Z. S. 1851, p. 50; Baird, Rev. Am. B. p. 255.

Myioborus melanocephalus, Tacz. P. Z. S. 1874, p. 509.

Supra schistacea; pileo toto, capitis lateribus et cauda nigris; oculorum ambitu, loris, plumarum frontis parte basali et corpore subtus aureo-flavis; rectricibus tribus utrinque extimis gradatim albis; rôstro et pedibus nigris: long. tota 5·0, alæ 2·6, caudæ 2·6, tarsi 0·75.

Hab. Bolivia and Peru.

Mus. nostr. et P. L. S.

This well-marked species was first discovered by Tschudi in Peru, where it has since been found by Jelski at Chilpes and Punamarca, and by Whitely at Khachupata. Its range also extends into Bolivia, where Mr. Buckley found it and sent us specimens from Simacu.

7. SETOPHAGA BRUNNEICEPS.

Setophaga brunneiceps, D'Orb. & Lafr. Syn. Av. i. p. 50; D'Orb. Voy. Ois. p. 329, t. 34. f. 3; Scl. Cat. Am. B. p. 37; Baird, Rev. Am. B. p. 258; Scl. & Salv. Nomencl. p. 11.

Basileuterus brunneiceps, Bp. Consp. i. p. 314.

Supra cinerascens; capitis lateribus obscurioribus, alis et cauda fuscescentibus; dorso medio olivaceo induto; loris, fronte stricte et ciliis albis; capite summo castaneo; subtus flava, crisso et rectricibus duabus utrinque externis fere omnino albis; rostro et pedibus nigris: long. tota 5·3, alæ 2·5, caudæ 2·8, tarsi 0·75.

Hab. Bolivia.

Mus. nostr., P. L. S., et Acad. Cantabr.

This bird is found exclusively in Bolivia, where it was first discovered by D'Orbigny, whose specimens were obtained in the Province of Yungas. Mr. Buckley also procured examples at Tilotilo, in the same province, which are now in our collection. Besides these, Mr. Sclater has a skin, and there is a similar one in the University Museum at Cambridge, which formed part of a collection that was sold in London in 1852, and which was believed to have been formed in Bolivia; but no certain information on this point transpired, nor is the collector's name known.

S. brunneiceps has no near allies, except *S. castaneocapilla* of the highlands of British Guiana.

8. SETOPHAGA CASTANEOCAPILLA.

Setophaga castaneocapilla, Cab. Schomb. Guian. iii. p. 667; Baird, Rev. Am. B. p. 259.

Supra saturate fusca; alis et cauda nigricantioribus; capite summo castaneo, fronte et genis dorso concoloribus; ciliis albis; subtus flava; crisso albo; rectricibus duabus utrinque externis in parte apicali albis, tertia utrinque albo terminata; rostro et pedibus corylinis: long. tota 5·3, alæ 2·6, tarsi 0·75.

Hab. Guiana.

Mus. Berol.

The single specimen of this species obtained by Schomburgk in the Roraima Mountains of British Guiana still remains unique. This specimen, through the kindness of Dr. Peters, I am now able to compare with the Bolivian *S. brunneiceps*—the species to which it is most nearly allied. The chief difference between the two consists in the colour of the back, which in *S. brunneiceps* is ashy, with a large median olivaceous patch, while in *S. castaneocapilla* the back is nearly uniform brown, with a scarcely perceptible tinge of olive. The feathers of the sides of the head of the specimen of *S. castaneocapilla* are somewhat worn; but I can trace white feathers surrounding the eye, but not the white loral streak shown in *S. brunneiceps*. There is also a difference in the amount of white in the lateral tail-feathers; these in *S. brunneiceps* are white almost to the base, whilst in *S. castaneocapilla* the white is confined on the outer feather to the terminal half.

I am not sure that some of the distinctive characters of *S. castaneocapilla* may not be traced to the immaturity of the specimen; but this can only be proved by the acquisition of more specimens.

S. castaneocapilla is one of the interesting species which, with many others, should be looked for carefully by any traveller who, treading in Schomburgk's steps, may visit the Roraima Mountains and the rest of the little-explored interior of British Guiana.

9. Setophaga chrysops, sp. n. (Plate VII. fig. 2.)

Setophaga flaveola, Kaup, P. Z. S. 1851, p. 50 (*nec* Lafr.).

Supra schistacea; capite postico, alis et cauda nigricantibus; capite antico et corpore subtus aureo-flavis; rectricibus duabus utrinque extimis fere omnino albis, tertia utrinque medialiter apicem versus alba; rostro et pedibus nigris: long. tota 5·5, alæ 2·7, caudæ 2·7, tarsi 0·75.

Hab. Columbia.

Mus. nostr., P. L. S., et Derb.

The specimen from which the above description and the accompanying figure were taken was obtained by Mr. T. K. Salmon at Santa Elena, in the Columbian state of Antioquia, two other similar examples being in Mr. Sclater's collection. At one time we thought that they might be *S. flaveola* in adult dress; but the restriction of the yellow of the occiput to the anterior portion of the head, and other points, prove that this view cannot be maintained. Moreover, a comparison of a sketch of the head of *S. flaveola*, taken from the type, both with the bird now described and with specimens of *S. ornata*, leads me to the conclusion that Lafresnaye's type of *S. flaveola* is but an immature specimen of the latter bird. The specimen in the Derby Museum, called *S. flaveola* by Kaup, agrees very closely with Mr. Salmon's examples. The anterior ear-coverts, however, are darker—a character which, I believe, indicates that this specimen is not so old as the Santa-Elena bird. The Derby-Museum specimen was obtained by the French collector Delattre on the Paramo of Popayan, and is marked "male." The range of *S. chrysops* would therefore appear to be restricted to the mountains forming the eastern boundary of the valley of the river Cauca.

10. Setophaga ornata.

Setophaga ornata, Boiss. Rev. Zool. 1840, p. 70; Kaup, P. Z. S. 1851, p. 50; Scl. P. Z. S. 1855, p. 144; Wyatt, Ibis, 1871, p. 323; Scl. & Salv. Nomencl. p. 11; Baird, Rev. Am. B. p. 258.

Setophaga leucomphomma, Kaup, P. Z. S. 1851, p. 49; Scl. P. Z. S. 1855, p. 144, et Cat. Am. B. p. 37.

Setophaga flaveola, Lafr. Rev. Zool. 1844, p. 81; Scl. P. Z. S. 1855, p. 144; Scl. & Salv. Nomencl. p. 11.

Supra olivascenti-nigra; alis et cauda nigricantibus, cervice postica et tectricibus supracaudalibus pure nigris; vertice toto (fronte inclusa) et corpore subtus læte flavis; auricularibus posticis, loris, regione periophthalmico et mento albis; rectrice utrinque extima fere tota, proxima in dimidio apicali alba; crisso albo; rostro et pedibus nigris: long. tota 5·5, alæ 2·9, caudæ 2·7, tarsi 0·8.

Hab. Columbia int.

Mus. nostr., P. L. S., et Derb.

Through Mr. T. Moore's kindness, I have before me the type of Dr. Kaup's *S. leucomphomma,* and also the specimen rightly determined by him to be *S. ornata.* The differences noted by Kaup are apparent when comparing these specimens; but I cannot but think that the specimens belong to one and the same species. So far as I can see, it is usual in many members of the genus *Setophaga* for the bright colours of the head to increase in extent with the age of the bird. Thus the less extent of the yellow of the vertex and the more restricted amount of white on the sides of the head in *S. leucomphomma* simply indicate that the specimen bearing that name is somewhat younger than individuals in the more advanced dress of *S. ornata.* We possess a specimen exactly agreeing with Kaup's type of *S. leucomphomma.* Another example, obtained from Verreaux, and stated to be from Ecuador, is still younger; in this the sides of the head, including the lores, are of the colour of the back, but a few of the white feathers are present. Were it not for the latter, this specimen would be almost exactly in the plumage described by Lafresnaye as *S. flaveola,* as shown by a sketch taken from the type in the Boston Museum. This being the case, I come to the conclusion that *S. flaveola* is only the young stage of *S. ornata,* in which the white feathers of the side of the head have not been developed.

S. ornata is a common species in Bogota collections; and it would seem that its range is restricted to a limited district in the vicinity of that city and the mountain-range extending northwards which forms the eastern boundary of the valley of the river Magdalena. In this direction Mr. Wyatt obtained a single specimen at Portrerras in 1870. The alleged occurrence of this species in Ecuador requires confirmation.

11. SETOPHAGA RUFICORONATA. (Plate VII. fig. 1.)

Setophaga ruficoronata, Kaup, P. Z. S. 1851, p. 49; Baird, Rev. Am. B. p. 255 (partim).

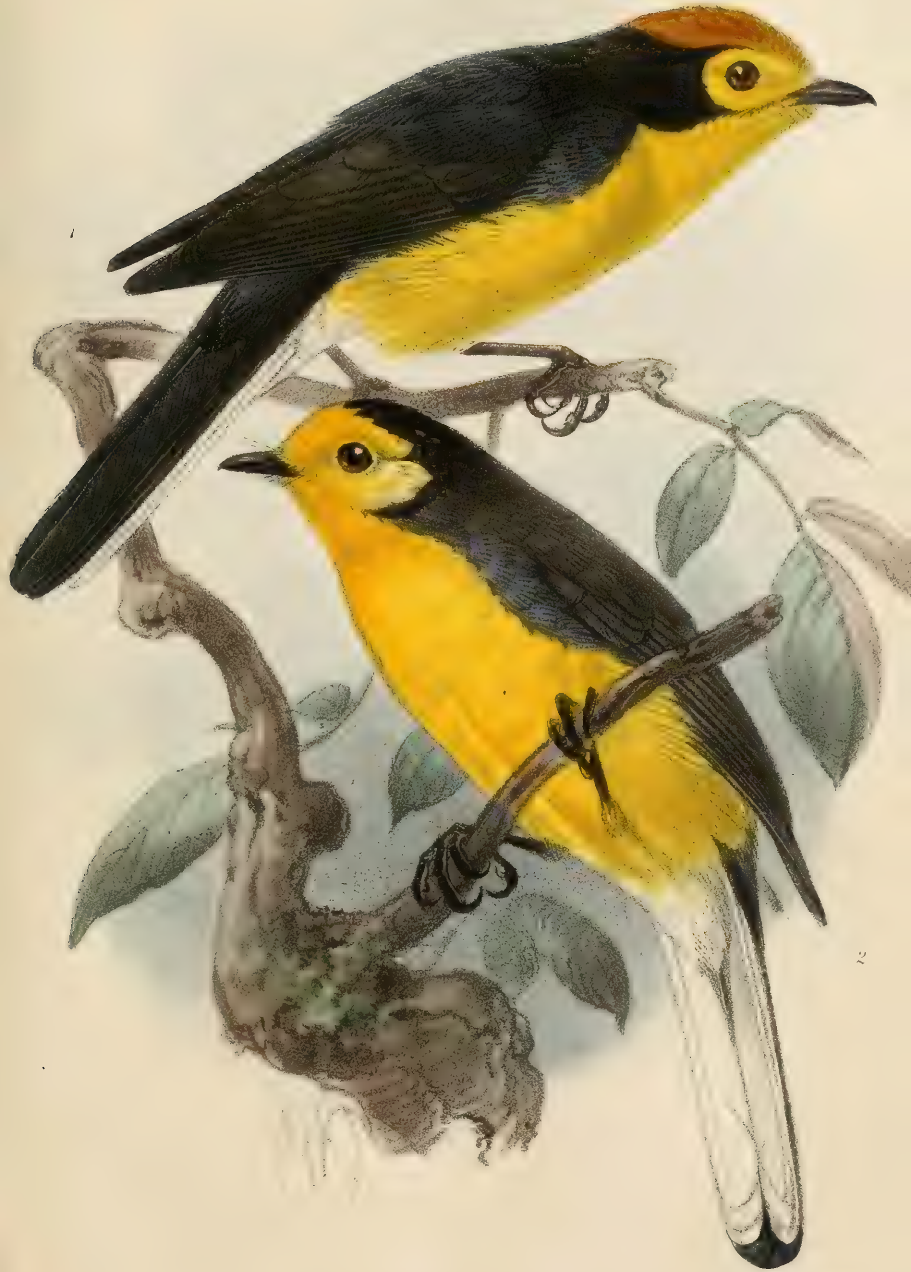
Supra ardesiaca; nucha, alis et cauda nigricantibus; vertice castanea; fronte, loris, regione periophthalmico, et corpore subtus aurantio-flavis; crisso, rectrice utrinque extima fere omnino, proxima in dimidio apicali, tertia medialiter apicem versus albis; rostro et pedibus nigris: long. tota 5·3, alæ 2·3, caudæ 2·7, tarsi 0·8.

Hab. Columbia int., Ecuador.

Mus. nostr. et Derb.

In treating of the genus *Setophaga,* in his 'Review of American Birds,' Professor Baird expressed a doubt (p. 255) as to the correctness of Mr. Sclater's application of the name *S. ruficoronata* of Kaup. An examination of the type, and the receipt from Mr. Buckley of two specimens from Ecuador exactly agreeing with it, prove that these doubts were well founded. The true *S. ruficoronata,* as a reference to the Plate accompanying this paper (Plate VII. fig. 1) will at once show, has no black margin whatever to the chestnut colour of the crown; whereas, in the bird hitherto called by us *S. ruficoronata,* not only is the chestnut crown distinctly margined with black, but that colour pervades the whole sides of the head, leaving only a circlet round the eye and a loral stripe yellow.

The type of *S. ruficoronata,* as shown by the original ticket on the specimen, was obtained by Delattre at Cali, in Columbia. Besides this bird, I have only seen the two specimens sent us



J G Keulemans lith

Hanhart imp

1 SETOPHAGA RUFICORONATA
2 CHRYSOPS

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NEW YORK.
OF NATURAL HISTORY.

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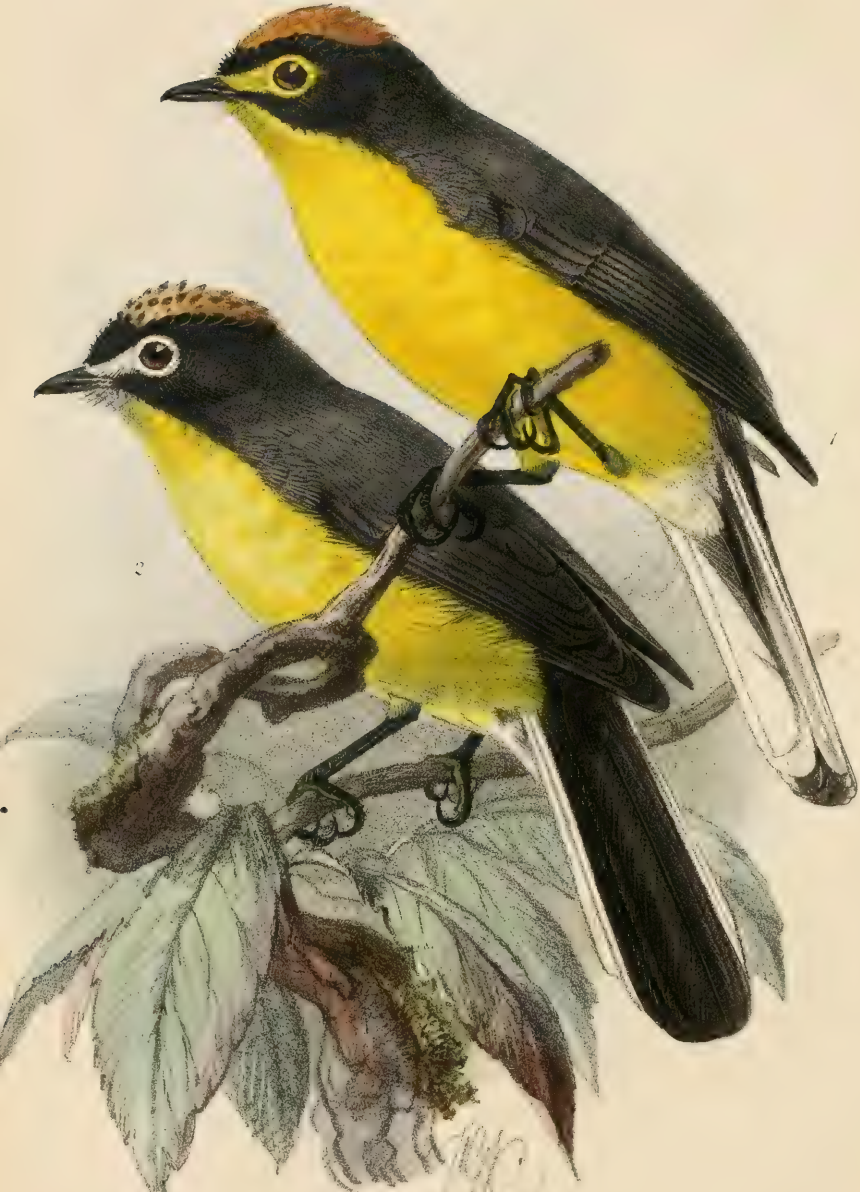
CENTRAL PARK,
NEW YORK,
OF NATURAL HISTORY.



J G Keulemans lith

Hanhart imp

1. SETOPHAGA BAIRDI.
2. " ALBIFRONS.

by Mr. Buckley, which were obtained by him at a place called Yauayaca, in Ecuador. This locality is probably not far from Sarayacu, a village on the Bobonassa river, a confluent of the Pastazza. It seems probable, from what Prof. Baird says, that the specimen belonging to the Academy of Natural Sciences of Philadelphia examined by him also appertains to this species.

The Plate is taken from one of Mr. Buckley's Ecuador specimens.

12. SETOPHAGA BAIRDI, sp. n. (Plate VIII. fig. 1.)

Setophaga ruficoronata, Scl. P. Z. S. 1858, p. 550, 1860, p. 74, et Cat. Am. B. p. 37; Scl. & Salv. P. Z. S. 1870, p. 784, et Nomencl, p. 11 (*nec* Kaup).

Setophaga ruficoronata (?), Baird, Rev. Am. B. p. 255.

Setophaga ——, Baird, Rev. Am. B. p. 258.

Supra schistacea; fronte, capitis lateribus, alis et cauda nigricantibus; pileo medio castaneo; oculorum ambitu, loris; et corpore toto subtus aureo-flavis; rectricibus duabus utrinque externis pro majore parte albis; rostro et pedibus nigris: long. tota 5·5, alæ 2·5, caudæ 2·5, tarsi 0·8.

Hab. Ecuador.

Mus. nostr. et P. L. S.

This species, first obtained by Fraser at Matos, and subsequently at Lloa, in Ecuador, has since been sent in considerable numbers from that country, and during the last few years by Mr. Buckley from San Lucas and Sical.

On receipt of Fraser's first specimens, Mr. Sclater determined them to belong to Kaup's *S. ruficoronata,* concluding he had before him the bird so meagrely described by that author. This determination remained unquestioned until Prof. Baird wrote his able 'Review of American Birds,' the non-completion of which must always be a subject of great regret. When examining the members of the genus *Setophaga,* Prof. Baird found good reason to doubt the correctness of Mr. Sclater's identification, and added that, should his suggestion prove well founded, he was not aware of any published name that properly belonged to the bird now under consideration.

An examination of the type of Kaup's *S. ruficoronata* at once shows that Prof. Baird's views respecting it were correct in every way; and I propose to supply the deficiency as regards the name of this species by calling it *Setophaga bairdi.*

Its difference from the true *S. ruficoronata* is obvious when the two birds are compared together. The chestnut crown of *S. bairdi* is surrounded on all sides by black, which colour, narrow towards the nape, extends across the forehead. The whole sides of the head are also black, with the exception of a ring round the eye and the lores, which are yellow. In *S. ruficoronata* the chestnut crown meets the yellow round the eye and the yellow forehead without any black intervening, and the side of the face beneath the eye is also yellow, being separated from the yellow of the under surface by a very narrow dark line; the black patch on the nape is considerably larger.

In examining a large series of *S. bairdi*, some specimens show that the black of the forehead is rather variable in amount; but a black superciliary streak is always present, and the extent of the yellow round the eye does not seem to exceed the amount shown in the figure (Plate VIII. fig. 1).

As regards the distribution of this species, we have no evidence as yet that it is found outside the limits of the Republic of Ecuador. Mr. Sclater included the name *S. ruficoronata* in his list of the birds of Santa Fé de Bogotá; but this must be considered to refer to the true *S. ruficoronata*, and not to the present species.

The figure has been taken from a specimen in our collection obtained by Buckley at Sical, in Ecuador.

13. SETOPHAGA ALBIFRONS. (Plate VIII. fig. 2.)

Setophaga albifrons, Scl. & Salv. P. Z. S. 1870, pp. 780, 784, et Nomencl. p. 11.

Supra schistacea; alis caudaque nigricantibus, pileo et capitis lateribus nigris, crista verticali cinnamomea, plumis nigro terminatis; fronte, loris et regione periophthalmica albis; subtus aureo-flava, tectricibus subalaribus et crisso cum rectricibus duabus utrinque pro majore parte albis; rostro et pedibus nigris: long. tota 5·5, alæ 2·6, caudæ 2·6, tarsi 0·8.

Hab. Merida, Venezuela.

Mus. nostr. et P. L. S.

Herr Goering is the only naturalist who has as yet sent specimens of this fine species. Besides the two skins in his first collection from Merida, mentioned by us when we first described the species, Goering subsequently sent others from the same locality, viz. the elevated wood-region of the Sierra Nevada of Merida. One of the latter is a young bird in which the whole head is uniformly coloured like the back, none of the ornamental markings of the crest &c. having made their appearance; the under surface is yellow, but the throat has not yet attained its mature colour, being of a brownish tint mingled with a few yellow feathers.

The bird figured is one of Hr. Goering's original specimens now in our collection.

14. SETOPHAGA TORQUATA.

Setophaga torquata, Baird, Rev. Am. B. p. 261; Lawr. Ann. Lyc. N. Y. ix. p. 96; Salv. P. Z. S. 1867, p. 136; Scl. & Salv. Nomencl. p. 11.

Supra schistacea; pileo undique, alis et cauda nigricantibus, crista verticali castanea; fronte, capitis lateribus et corpore subtus flavis, torque pectorali dorso concolore; rectrice utrinque externa pro majore parte alba, proxima dimidio apicali alba, tertia albo terminata; rostro et pedibus nigris: long. tota 5·4, alæ 2·6, caudæ 2·5, tarsi 0·8.

Hab. Costa Rica and Veragua.

Mus. nostr. et P. L. S.

This well-marked species is confined in its range to the mountain-districts of Costa Rica and Veragua. In the former country it has been found by nearly all collectors who have worked there, and specimens have been obtained in the vicinity of San José, in the forests of the Volcano of Irazu, and at La Palma. From Veragua we have received specimens obtained in the Volcano of Chiriqui and from the Cordillera de Tolé.

In the distribution of the colours of the head this species differs from all its congeners; but the most striking distinction is the dark pectoral band, which is not present in any other member of the genus.

15. SETOPHAGA LACRYMOSA.

Euthlypis lacrymosa, Cab. Mus. Hein. i. p. 19; Bp. Consp. p. 314; Scl. P. Z. S. 1856, p. 291, 1859, p. 364, et Cat. Am. B. p. 36; Scl. & Salv. Ibis, 1860, p. 274; Lawr. Mem. Bost. Soc. N. H. ii. p. 270.

Setophaga lacrymosa, Baird, Rev. Am. B. p. 263; Scl. & Salv. Nomencl. p. 11.

Supra schistacea vix olivaceo tincta; fronte et superciliis, loris et regione suboculari nigris, macula lorali et ciliis albis; pileo medio sulphureo; subtus ochraceo-flava, gula et abdomine medio flavescentioribus; hypochondriis olivaceis; crisso flavescente albo; rectricibus omnibus albo terminatis; rostro nigro, pedibus corylinis: long. tota 6·0, alæ 3·0, caudæ 2·8, tarsi 0·95.

Hab. Mexico and Guatemala.

Mus. nostr. et P. L. S.

This peculiar and well-marked species, when first described by Dr. Cabanis, was made the type of a new genus, *Euthlypis,* and it doubtless has some claim to be so considered; but not wishing to carry the subdivision of genera quite so far as to allow *Euthlypis* full generic rank, I here follow Prof. Baird's arrangement and place *Euthlypis* as a subgenus of *Setophaga.* The bird is larger than any other species of *Setophaga,* and has a longer and stronger bill, and in this respect approaches the genus *Basileuterus.* In having white tips to the tail-feathers, which it displays in true Setophagine fashion, it seems rightly placed in *Setophaga.*

S. lacrymosa was first described from a specimen in the Berlin Museum obtained at Lagunas, in Mexico, in which country it has been found by several collectors—by Grayson (who gives a short account of its habits) as far north as Mazatlan, by Sallé at Cordova, and by De Oca at Jalapa. In Guatemala its range is very restricted; indeed I only know of its having been met with in the forests, which lie at an elevation of from 3000 to 4500 ft., between the Volcanos of Agua and Fuego. In September 1859 I observed a pair in the woods near the village of Alotenango in this district, and watched for some time their restless motions and the curious habit they have of expanding their tails and swaying them to and fro. Subsequently our Indian hunters used not unfrequently to bring us specimens from the same district; but nowhere else did we meet with it, nor am I aware that specimens are ever included in the large collections sent home from time to time from Vera Paz.

Many species of various genera have from time to time been placed in the genus *Setophaga,* but have since been relegated to their proper systematic positions; so that I need not refer to them here. One species, however, calls for remark; and that is *Setophaga multicolor,* briefly described by Bonaparte in his 'Conspectus Avium' (i. p. 312), from a specimen in the Senckenberg Museum said to be from Mexico. It must be observed that Bonaparte adopts with doubt Gmelin's name, *Motacilla multicolor,* for D'Aubenton's '*Figuier noir et jaune de Cayenne*' (Pl. Enl. 391. f. 2)—an older title for which is *Motacilla tricolora,* Müll. (Natursyst. Suppl. p. 175). Judging from the figure, I should think it intended to represent *Setophaga ruticilla,* a species already traced to British Guiana. Bonaparte's diagnosis, however, hardly suits this figure, but answers very well to Gmelin's description of his *Muscicapa multicolor* (Syst. Nat. i. p. 944), founded on the Red-bellied Flycatcher of Latham, a bird now known as *Petrœca multicolor,* and which comes from Australia. In the absence of all trace of a species of *Setophaga* in Mexico answering to Bonaparte's diagnosis, I am inclined to think that he took his characters from a specimen of *Petrœca multicolor* to which a wrong locality had been attached.

In conclusion, I beg leave to express my thanks to Mr. Thomas Moore and the authorities of the Derby Museum of Liverpool, and also to Professor Peters of Berlin, for the loan of specimens which have helped me most materially in working out the synonymy of this genus.

XXIII.—*Contributions to the Ornithology of Siberia.*

By Henry Seebohm.

[Continued from p. 184.]

(Plate IX.)

The following notes on the birds of Siberia are of course extremely fragmentary. It is very seldom that the first expedition to a strange land is successful. The pioneer can do little more than discover the localities where future researches may be successfully made. My great mistake was that I wintered too far north. Had I waited the arrival of migratory birds at Yen-e-saisk′, instead of on the Arctic circle, my ornithological bag would have been increased fourfold in value. My list is almost as remarkable for what it omits as for what it includes. There is no doubt that the Merlin is common in the valley of the Yen-e-say′; and a little further south, most likely they would have been found chasing the Snow-Buntings. I was probably only just beyond the northern range of the Siberian Jay. On my return journey my time was necessarily very limited, and I was obliged to husband my ammunition. It was also the most unfavourable time of the whole year for making ornithological observations. During the breeding-season many birds forsake the neighbourhood of the villages and the cultivated land, and scatter themselves through the forests; and whilst they are moulting in the autumn, they seem to be fully aware that their powers of flight are limited, and that consequently they are an easy prey to their Raptorial enemies, and therefore they seem afraid to trust themselves on the wing. For the most part they are silent at this season, and skulk amongst the underwood, and it is only by chance that one can obtain a shot at them.

My plans were also considerably disarranged by the two shipwrecks, which did not form a part of my original programme; nevertheless I trust that the observations I was able to make may prove interesting to the student of ornithology.

Haliaetus albicilla (Linn.).

The Sea-Eagle was common on the banks of the Yen-e-say′, becoming gradually rarer north of the Arctic circle. I had a fine male brought me which had been caught in a fox-trap.

ARCHIBUTEO LAGOPUS (Gmel.).

I frequently saw the Rough-legged Buzzard on the wing near our winter-quarters, but failed to secure a specimen.

MILVUS MIGRANS (Bodd.).

I did not notice the Black Kite on the Yen-e-say′ until we reached lat. 61° on the return journey. From this point it increased in abundance as we proceeded south and west, until in Tomsk it swarmed to as great an extent as it does in Constantinople. I did not shoot one of these birds.

FALCO PEREGRINUS, Tunstall.

The Peregrine Falcon was first seen on the Koo-ray′-i-ka about the middle of May; and on the 25th of that month I secured a fine male. I once saw one of these birds dash into a flock of Snow-Buntings and bear one off in its talons. On the tundra they were breeding on the steep mud-cliffs on the banks of the Yen-e-say′. In lat. 69½° I spent the night of the 13th–14th July on shore, shooting. I had no sooner landed than a couple of Peregrines showed me their nest by their loud cries. A glance at the cliffs decided the place where the nest ought to be—on the top of a steep mud promontory, which stretched out to a sharp ridge beyond and above the surrounding coast. I climbed up a valley in which the snow was still lying, and walked straight along the ridge to the little hollow where the four red eggs were placed upon a dozen small flakes of down. The eggs were considerably incubated.

FALCO TINNUNCULUS, Linn.

I did not observe the Kestrel until I reached Yen-e-saisk′ on my return journey, about the middle of August. The banks of the river to the south of the town are very flat; and a wide extent of meadow-land, which had recently been cut for hay, stretches southward for miles. This plain is surrounded by forests and intersected with numerous half-dried-up river-beds running parallel to the Yen-e-say′. In this locality I found the Kestrel very abundant, and I frequently saw as many as a score on the wing together. It was also very common on the road-side as we drove through Kras-no-yarsk′ to Tomsk, frequently alighting on the telegraph-posts.

ACCIPITER NISUS (Linn.).

The Sparrow-Hawk was one of the numerous enemies which the Snow-Buntings had to guard against as long as they stayed at our winter-quarters. I shot a male on the 1st of June, but had frequently seen this bird earlier.

CIRCUS CYANEUS (Linn.).

I saw the first Hen-Harrier on the 24th May, and one or more were almost daily seen as long as we remained at the Koo-rāy-i-ka. I shot two old males, one young male, and one female.

SYRNIUM URALENSE (Pall.).

We frequently saw a large Owl, which I have little doubt was of this species, sailing over the ship in the evenings whilst she was frozen up in winter-quarters; but it took care never to come within range of our guns.

ASIO ACCIPITRINUS (Pall.).

I twice saw the Short-eared Owl, once in lat. 66½°, and the other time in lat. 67°, but failed to secure a specimen.

NYCTEA SCANDIACA (Linn.).

I did not see the Snowy Owl on the wing, but had a very white specimen sent me in the flesh, which had been caught in a fox-trap. In lat. 70½° the natives told me that this bird and the Willow-Grouse were the only species which wintered on the tundra.

PODOCES HENDERSONI, Hume.

This remarkable bird has not yet been recorded from political Siberia, but occurs almost on the frontiers, in the Eastern Palæarctic region. When I was passing through Omsk, Professor Slofftzoff presented me with a skin of this bird, which had been shot by a shepherd on the Chor′-na Ear′-tish, or Black Irtish, a river which flows through Lake Saisan and joins the Ear′-tish near Semipalatinsk. The shepherd described it as very wild and difficult to approach, and said that he had chased it for a couple of days before he succeeded in securing it.

This specimen differs from Hume's description in having no spots on the head. Only a few of the feathers on the nape have slight indications of spots, almost like gold dust, at the tips. The plate of this bird in 'Lahore to Yarkand' (p. 244) is by no means a good one. The bar on the wing in my copy is coloured very pale blue, instead of pure white; and the conspicuous white feathers on the carpal joint are entirely concealed by the feathers of the breast.

PICOIDES TRIDACTYLUS (Linn.).

Picus tridactylus, Linn. Syst. Nat. i. p. 177 (1766).

Apternus crissoleucus, Bonap. Consp. Vol. Zyg. p. 9 (1854), ex Brandt, MS. in Mus. Petrop.

On my arrival at the wintering-place of the 'Thames' on the Arctic circle, I found the Three-toed Woodpecker common in the pine-forests on both banks of the Koo-ray′-i-ka, and was assured by the sailors that it had frequently been seen there throughout the winter. I brought home seven skins of this bird, six of which are representative examples of the form *P. crissoleucus* (Bp.), in which the underparts are much whiter than usual, the feathers on the belly and under tail-coverts being very slightly barred with black, and the outside tail-feathers also displaying more white than in the common form. The seventh skin agrees exactly with skins of the usual colour in my collection from the Petchora, Archangel, and Norway. It seems doubtful whether *P. crissoleucus* be an Eastern form of *P. tridactylus*, or merely a very old bird of the latter species. I may remark that in my series of skins the yellow on the head of the male is more developed in the paler-coloured birds than in those more profusely barred, favouring the idea that the difference is one of age.

SITTA EUROPÆA, Linn.

Birds are very rare in the Siberian forests in winter. I have often silently threaded my way between the pines on snow-shoes for hours without hearing a note or seeing a feather. Then, perhaps, I should suddenly find myself in the midst of a small party of Lapp-Tits. What few birds there are in these vast solitudes are very sociable. I generally found the Lapp-Tits accompanied by a pair of Pine-Grosbeaks, and occasionally by a pair of Nuthatches. The Nuthatch of the Yen-e-say′ cannot be separated specifically from the common European form. It is undoubtedly a whiter form. The forehead is whiter, and the flanks are much less rufous. These paler forms are characteristic of Siberia, and have given rise to many new synonyms. Thus the Siberian form of *Picus tridactylus* has been called *P. crissoleucus* by Brandt, that of *Parus cinctus P. grisescens* by Dresser; and the pale form of *Sitta europæa* is the *S. uralensis* of Lichtenstein, the *S. asiatica* of Gould, and the *S. roseilia* of Bonaparte.

Dresser, in his 'Birds of Europe,' describes the legs of *S. europæa* as "plumbeous grey," in contradistinction to those of *S. cæsia,* which he describes as "pale dull brown." This does not at all agree with my observations in Siberia. The following note was written on the spot, with several fresh-killed birds of each of the two species referred to before me:—"The Nuthatch and the Titmouse which are found here are remarkably alike in their general distribution of colour, but differ considerably in the bill and feet. The feet of the Lapp-Titt are lead-colour, almost black. The bill of the Nuthatch is dark lead-colour above, and pale lead-colour below, almost the colour of the back." The feet, on the other hand, seem to have been painted with the same colouring matter as the under tail-coverts, and are pale chestnut-brown, with the soles a dirty yellow.

CUCULUS CANORUS, Linn.

I first heard the Cuckoo on the 5th June, and shot a male a few days later. I did not myself hear this bird further north than 67°, but was assured that it was not unfrequent at Doodin′-ka, in lat. 69°, nearly at the limit of forest-growth.

CUCULUS HIMALAYANUS, Vigors.

On the 15th of June a second species of Cuckoo presented himself, with an entirely different voice to our bird, a guttural and hollow-sounding *hoo,* not unlike the cry of the Hoopoe. This cry can be heard at a great distance, and is generally repeated two or three times in succession. The bird was very wild, and I only succeeded in shooting two of them, both females—one an old bird in grey plumage, the other in the red plumage of the first year. This Cuckoo is almost an exact miniature of our bird, though the bill is slightly larger than that of the common European Cuckoo, and the barring on the underparts somewhat more distinct. If it had not been for the difference in voice, I should have scarcely supposed it to be more than a small race of our bird. The wings measure 7·6 in.

CUCULUS STRIATUS, Drapiez.

"*Cuculus striatus,* Drapiez," Jerdon, B. Ind. i. p. 328.

"*Cuculus optatus,* Gould," Radde, Amurl. ii. p. 135.

In Dresser's exhaustive article on the Common Cuckoo in the 'Birds of Europe,' of which he has kindly lent me the proof sheets, he refers to the nearly allied species. Two of these come into my Siberian region, *Cuculus optatus,* Gould apud Radde, and *Cuculus sparverioides,* Vigors apud Schrenck. Dresser identifies *C. optatus* with *C. himalayanus.* In this I cannot agree with him. After comparing Jerdon's excellent description of the note of the Himalayan species with Radde's minute account of the note of the Amoor bird, I think we may positively state that *C. optatus,* Gould apud Radde, is not *C. himalayanus,* Vigors apud Jerdon. The dimensions given by Radde are much too large for those of *C. himalayanus,* and agree best with those of *C. striatus.* After examining the cuckoos in the British Museum, I do not feel much doubt that Radde's bird was a specimen of *C. striatus.*

CUCULUS HYPERYTHRUS, Gould.

Von Schrenck gives an excellent figure of what he thinks, somewhat doubtfully, to be an immature male of *Cuculus sparverioides,* Vigors. I have two skins lately brought from Japan by Mr. Heywood Jones, which agree exactly with Schrenck's plate. They appear to me to be much too small for *C. sparverioides;* and I am inclined to identify both the Amoor and the Japan birds with the *Cuculus hyperythrus* of Gould, described by him in the P. Z. S. of 1856, p. 96, and figured in the 'Birds of Asia' (pt. 8).

Corvus corax, Linn.

We occasionally noticed Ravens during almost the whole of our long sledge-journey; but at the Koo-ray′-i-ka they did not appear until the middle of May. After their arrival a day seldom passed without one or more being seen. They seemed to me to be less shy than Ravens usually are, and I had no difficulty in shooting half a dozen to skin. I was told, upon good authority, that in summer they are found as far north as the Russian fishermen go, about lat. 72°. I brought home eight skins of this bird with me. They varied in length of wing, from carpal joint, from 16·2 to 17·2 inches. The exposed portions of the bastard primary varied from 6 to 7 inches, and the distance from the end of the first primary to the end of the second primary from 3·3 to 4 inches, the bastard primary exceeding in length the end of the innermost secondaries.

Corvus cornix, Linn.

During the whole of our long sledge-journey from Nishni Novgorod as far as Tomsk the Hooded Crow abounded on the road-sides; and in returning during the autumn I found it equally common on the banks of the various rivers which the steamer navigates between Tomsk and Tobolsk, and between the latter town and Tyu-main′. Indeed, so far as my observation goes, the whole of Russia and West Siberia may be described as a vast colony of Hooded Crows. East Siberia, on the other hand, is an equally vast colony of Carrion-Crows. From Kras-no-yarsk′ to Yen-e-saisk′ I saw nothing but the Carrion-Crow. Middendorff records the same on the Lay′-na, and eastwards to the sea of Okotsk; and southwards Prjevalsky (pronounced Psheval′sky) found it common in Mongolia. The distance between Tomsk and Kras-no-yarsk′ is about 550 versts. As you travel eastwards from Tomsk for the first 200 versts the Hooded Crow only is to be seen. During the last 200 versts before reaching Kras-no-yarsk′ the Carrion-Crow alone is found. In the intermediate 150 versts about one fourth of the Crows are thoroughbred Hoodies, one fourth are pure Carrion, and the remaining half are hybrids of every stage; mulattoes, quadroons, octoroons, and so on *ad infinitum*. The line of demarcation between the two species may be roughly taken at the meridian of Calcutta, extending north of Yen-e-saisk′ along the valley of the Yen-e-say′, and south of that town along the watershed of the Obb and the Yen-e-say′. That this state of things is not of recent origin is proved by the fact that it is recorded by Middendorff, who remarked the presence of hybrid Crows at Yen-e-saisk′ as long ago as 1844. Hybrids between *C. corone* and *C. cornix* occur occasionally in Scotland, on the Elbe, in Turkestan, and probably wherever both species occur. The fact that these hybrids present a series of every intermediate form between the two species is *primâ facie* evidence of their fertility. I succeeded, however, in getting *positive* evidence of this fact. On the 11th May, whilst the ground was still covered with six feet of snow, I found a pair of hybrid Crows in possession of a nest near the top of a pine tree. The nest contained one egg. On the 21st I climbed up to the nest again, and found it to contain five eggs. Two of these I took. On the 31st one egg was hatched, and the other two were chipped ready for hatching. On the 26th June I again climbed up to the nest, and found that one of the young birds had either died or flown. I took the other two and shot the female. She proved to be at least three parts Carrion-Crow. The feathers on the sides of the neck, and on the lower part of the breast and belly, are grey, with dark centres. I was unable to shoot the male; but I had on various occasions examined him through my binocular. He had more Hoodie blood in him than the female, having a very grey ring round the neck, and showing a good deal of grey on the breast and under the wings.

My total bag of Crows at the Ku-ray′-i-ka was three thoroughbred Hoodies (two males and a female), ten thoroughbred Carrions (nine males and one female), and fifteen hybrids (seven males and eight females). These figures, as far as they go, lead me to the conclusion that the female Carrion-Crows were all breeding, away in the woods, so that I rarely got a shot at one, whereas the female hybrids were most of them barren, so that I was able to shoot as many of one sex as of the other. The following descriptions of these handsome birds may be worth recording:—

No. 161. The thoroughbred Hooded Crow of the Yen-e-say′ has the wings, tail, head, throat (extending as far as the upper part of the breast), and thighs black. The rest of the body is ashy grey, slightly darker on the under tail-coverts. The upper tail-coverts begin grey, gradually become darker in the centre until they are only edged with grey, and finally become black as they join the tail. The axillaries are grey. The grey is much lighter than in Western-European birds, being almost as light as in *Corvus capellanus* of Sclater, from Persia. The latter bird, however, has a longer bill.

No. 181 can only be called a Hooded Crow. The grey is a shade darker than in the preceding, and the shafts of the grey feathers on the back are very dark.

No. 162 has traces of black on the centres of the feathers across the back, but perhaps not more than one might expect to find in an accidental variety.

No. 128. The grey on the back is very similar to the preceding; but the upper and under tail-coverts are so much darker than usual that I have no hesitation in saying that this bird is not thoroughbred.

No. 164 has still more Carrion-Crow blood in its veins. All the feathers of the back are black, with grey edges. The axillaries and upper and under tail-coverts are nearly black. The breast and belly are much darker than usual.

No. 166 I take to be about half-bred. It differs from the latter bird in having more or less grey edgings to the feathers on the back between the shoulders, in having the feathers of the breast and belly broadly edged with grey, and in having more or less grey on the axillaries and under tail-coverts.

No. 141 is very similar to the preceding; but the grey edges to the feathers are less distinct.

Nos. 12, 143, 144, 146, 163, 165, 167, and 168 are evidently the commonest form (possibly octoroons). They are black, with a band of grey feathers (many of them with black centres) extending round the neck, below the black head, across the shoulders, above the wings, and crossing the breast below the black throat.

Nos. 139 and 140 are nearly thoroughbred Carrion-Crows: but they show a little grey on each side of the neck, between the head and shoulders.

These hybrids average 13·2 inches in length of wing from carpal joint, varying from 12·3 to 13·8. The exposed portion of the first primary varies in length from 4·2 to 4·8 inches; and the distance from the end of the first primary to the end of the second primary averages 3·3, varying from 3·1 to 3·6.

My Yen-e-say′ Carrion-Crows average 13·3 in length of wing from the carpal joint, varying from 12·7 to 14 inches. The exposed portion of the first primary varies in length from 4·3 to 5·2; and the distance from the end of the first primary to the end of the second primary averages 3·4, varying from 3 to 3·9.

Corvus corone, Linn.

I was disappointed not to find any bird which I could identify with any of the eastern forms of this species, such as *C. orientalis* or *C. japonensis*. Both *C. corone* and *C. cornix* appear to winter south of lat. 60°. When we arrived at the Arctic circle we were surprised to find a pair of black Crows frequenting the banks of the Koo-ray′-i-ka. The sailors called them Ravens, and assured me that they had wintered near the ship. I succeeded in shooting the male; but, with the exception that he is slightly larger than any other Carrion-Crow which I shot, I cannot find any point of difference. He measures 14 inches in length of wing. The exposed portion of the bastard primary is 4·5; and the distance from the end of the first primary to the end of the second primary is 3·9. The end of the bastard primary falls considerably short of the end of the innermost secondaries.

After leaving the Arctic circle both this and the preceding species rapidly became rarer. We saw the last Hooded Crow in lat. 69°, and the last Carrion-Crow in 69½°, about the limit of forest-growth.

Corvus frugilegus, Linn.

As we sledged over the snow in March and April from Nishni Novgorod to Yen-e-saisk′, we never by any chance saw a Rook amongst the Magpies, Ravens, Crows, or Jackdaws on the road-side. Nor did I meet with this bird within the Arctic circle; but I was informed, upon very good authority, that a pair had once been seen two stations south of Vareshin′-sky, about lat. 68½°. On the return journey I kept a sharp look-out for the Rook, but did not see it until we were threading the labyrinth of the Toor′-a, a little to the east of Tyu-main′. Here large flocks of Rooks were feeding on the banks of the river.

Corvus monedula, Linn.

Jackdaws were common on the road-sides and in the villages through which we sledged as far as Tomsk, but became gradually rarer as we neared Kras-no-yarsk′, and disappeared altogether at Yen-e-saisk′. Mr. Boiling told me that a stray bird of this species was occasionally seen at the latter town, but that he had not seen any further north.

Nucifraga caryocatactes (Linn.).

As we sledged down the Yen-e-say′ in April we first saw the Nutcracker in lat. 64°; and from that time we rarely missed seeing these birds at the different stations where we stopped to change horses. When we reached the 'Thames' we found this bird quite common and remarkably tame. At one time I counted as many as eight in one tree together. They are wonderfully sociable birds. Whilst the sailors were working at the ship, cutting away the ice all round her, there were frequently two or three Nutcrackers in different parts of the rigging, apparently watching the operation with great interest. They seem to be well aware of the fact that offal and scraps of food of all kinds are always to be found in winter near the habitations of man. Their tameness was quite absurd. Sometimes the Ost-yak children shot one with a bow and arrow; and occasionally one was caught by the dogs. On the bushes round the house they allowed us to approach within four or five feet of them, and when disturbed moved to the nearest tree with a peculiar slow undulating flight. I carefully preserved them, and fed them with the bodies of the birds I skinned, as I was anxious to secure a good series of their eggs. They treated me, however, in a most ungrateful manner. They continued to be abundant until about the 7th of June, when the snow was pretty well melted from the ground. They then vanished altogether, and, with the exception of a couple of birds I picked up later, in full moult, I saw no more of them until they reappeared in flocks at various stations on the return journey. I offered considerable sums for a nest containing eggs; but both the Russian peasants and the natives informed me that they had never heard of any one who had seen the nest of a "Ve-roff′-ky," as they call this bird. They doubtless retire into the recesses of the forest to breed.

PICA RUSTICA, Scop.

Magpies were very common as far as Yen-e-saisk′, but disappeared further north, at about lat. 60°. I did not see any during the summer within the Arctic circle; but Mr. Ulemann, an exile from West Poland, and a very intelligent observer of birds, assured me that he saw a pair every year at Vareshin′-sky, in lat. 69°, and had occasionally seen one as far north as Doo-dink′-a, in lat. 69½°.

STURNUS VULGARIS, Linn.

I did not observe the Starling until we had almost reached Yen-e-saisk′ on the return journey. At that town it was extremely abundant, for the most part in large flocks.

LANIUS MAJOR, Pall.

This Shrike was very common on the roadsides as we drove from Yen-e-saisk′ to Tomsk. It was very fond of perching on the telegraph-wires. It differs from *L. excubitor* in only showing one white bar across the wings. The white bases to the primaries, from the second to the ninth inclusive, extend for about half an inch beyond the wing-coverts; whilst in the secondaries the white bases are entirely concealed by the wing-coverts, or are absent altogether. Russow, at the St. Petersburg Museum, told me that this is the common eastern form, that *L. excubitor* breeds near St. Petersburg, whilst *L. major* only passes through on emigration. It winters in Asia Minor. It does not appear to be a very clearly differentiated species. I have a skin from Asia Minor with the basal half of the eleventh quill white, whilst the tenth, twelfth, and succeeding quills scarcely show a trace of white at the base; and, curiously enough, this is the same in both wings. Birds like these may be intermediate forms; or, after my experience of the Crow, I should not be surprised to find that on the boundary line of their geographical distribution they occasionally, if not habitually, intermarry.

PASSER DOMESTICUS (Linn.).

The common Sparrow abounded in all the towns and villages through which we sledged as far as Yen-e-saisk′, and disappeared about lat. 60°. On the 16th of June a solitary pair appeared at the Koo-ray′-i-ka, the only occasion on which I met with this bird within the Arctic circle.

PASSER MONTANUS (Linn.).

The only place between Nishni Novgorod and Yen-e-saisk′ where I observed the Tree-Sparrow was at a little village about forty miles west of Kasan. In Yen-e-saisk′ it was as abundant as the common Sparrow; but I did not meet with it further north.

PYRRHULA MAJOR, Brehm.

The very handsome large variety of the Bullfinch with the brick-red breast was very abundant wherever the road passed through forests as far as Yen-e-saisk′; but I did not meet with it afterwards, either in the Arctic circle, or on the return journey.

CARPODACUS ERYTHRINUS (Pall.).

The Scarlet Bullfinch arrived on the Arctic circle on the 6th of June, and was soon afterwards very abundant. I did not observe it further north than lat. 68°. Its cheerful little song was constantly heard. It did not require a great stretch of imagination to fancy it said "pleased to see′ you." I only shot one male without the scarlet on the breast. Baron Maydell got this bird in the Tschuski Land.

Corythus enucleator (Linn.).

We found the Pine-Grosbeak common in the forests on the Arctic circle in small parties on our arrival. When summer came they dispersed in the woods, and were very rarely seen. I did not observe them further north.

Fringilla montifringilla, Linn.

The Brambling arrived at our winter-quarters on the 1st of June. I did not observe it further north than 69°.

Linota linaria (Linn.).

Linota exilipes (Coues).

At Yen-e-saisk′ we found large flocks of Redpoles in the first week in April; but they did not put in an appearance at the Koo-ray′-i-ka until the 28th of May. I obtained both these supposed species, and every possible intermediate form.

The young in first plumage (No. 943, shot in the valley of the Yen-e-say′, in lat. 69°, on the 29th July) differs from the adult birds in having the edgings of the feathers of the plumage generally, but especially of the wing-coverts and innermost secondaries, greyish buff, instead of pure white. The feathers on the breast, flanks, and under tail-coverts have a dark streak in the centre.

My series of these birds comprises forty carefully selected skins, from Norway, the Petchora, and the Yen-e-say′. Twenty-two of these are males, and eighteen are females. Two skins, one of a male and the other of a female, both shot in April, show considerable remains of the buff colour on the head, back, wing-coverts, and inner secondaries, characteristic of the bird of the year. Other skins show traces of this buff colour on the head and back only.

These birds fly in such large flocks that one often gets a dozen or more at a shot. In selecting birds to skin I invariably chose all the birds showing red on the breast, rejecting a large proportion of those without red breasts; nevertheless only half the males in my collection show any red on the breast. So far as it goes, this fact supports the theory of Mr. Hancock, that the red breast is a sign of immaturity. My red-breasted birds vary considerably *inter se.* Four of them have only a tint of rose-colour on the breast and rump. Three of these were shot in April, and one in June. They may be taken as types of the supposed species *L. exilipes.* All the feathers, but especially those on the rump, the wing-coverts, the inner secondaries, and the inner web of the outside tail-feathers, are broadly margined with white. There are scarcely any dark centres to the feathers on the rump, and none on the under tail-coverts; and the underparts are specially white. Two males, without the red breast, have the same characters, but are more abraded in plumage, and show less of the white margin to the feathers. A skin dated 12th July has the feathers so abraded that the white rump, and the white margins to the feathers generally, have almost disappeared; but the under tail-coverts are pure white. A skin dated 13th of June, from Norway, may be taken as full summer plumage of this form. The white margins to the tail-feathers are very conspicuous; but the red on the breast is more developed, and the mealy appearance of the bird has suffered from the abrasion of the feathers. Two females may possibly belong to this form, one of them having unstreaked under tail-coverts, and the other an unstreaked rump; but neither of them shows the broad margins to the tail-feathers. Another skin, dated the 7th of April, has the unstreaked rump, but streaked under tail-coverts. The breast is very carmine for the alledged species *L. exilipes*; and this skin also wants the broad white margins to the tail-feathers; but, as it shows a good deal of the immature buff-colour on the upper parts, it may be a bird which has retained other marks of immaturity.

Four skins with richly carmine breasts, and traces of carmine on the rump, all shot in June, are representative examples of *L. linaria* in breeding-plumage. They have all streaked rumps and under tail-coverts; but one of them has broad white edgings to the inner webs of the tail-feathers. In two other skins, one shot on the 28th of July and the other on the 2nd of August, the plumage is very abraded, and the carmine on the breast nearly lost. The remaining skins have no carmine on the breast. In all of these the white edgings to the tail-feathers are narrow. They have all striped under tail-coverts; and all but two have streaked rumps.

I am inclined to think that *L. exilipes* is the same species as *L. linaria.* I do not see that it is even a good variety. So far as I can make out, the differences are only those of age, sex, and season. If they must be separated, I think the colour of the under tail-coverts is a better character to go upon than that of the rump. Five birds, all males, have larger bills than the rest. Four of these have streaked rumps and under tail-coverts, the fifth is the slightly immature bird previously mentioned as having been shot on the 7th of April.

I found these birds common as far north as I went, *i. e.* lat. 71½°.

EMBERIZA PUSILLA, Pall.

The arrival of birds in the Arctic regions is dependent, to a large extent, upon the arrival of summer, which comes suddenly with the breaking up of the ice on the river, and the general melting of the snow. Last year, summer was unusually late in Northern Asia. On the Arctic circle, in the valley of the Yen-e-say′, the ice on the river began to break up on the 1st of June, and migratory birds arrived in great numbers. On the 7th the Little Bunting arrived, in company with the Golden Plover and the Dark Thrush, nearly in the middle of the spring migration.

Before the snow, which was lying upon the ground to the depth of five or six feet up to the 1st of June, had sufficiently melted to make the forests penetrable, the Little Bunting was extremely abundant, and its unobtrusive song was constantly heard. On the 23rd of June I found the first nest. I was on the south bank of the Koo-ray′-i-ka, and was scrambling through the forest down the hill towards my boat, amongst tangled underwood and fallen tree-trunks, rotten and moss-grown, when a Little Bunting started up out of the grass at my feet. It did not fly away, but flitted from branch to branch within six feet of me. I knew at once that it must have a nest; and in a quarter of a minute I found it, half hidden in the grass and moss. It contained five eggs. The bird was still close to me; and I was obliged to leave the nest in order to get far enough from the bird, so as to avoid blowing it to pieces. It seemed a shame to shoot the poor little thing; but as the five eggs in the nest were the only authentic eggs of this species known to exist, it was absolutely necessary for their complete identification. The nest was nothing but a hole made in the dead leaves, moss, and grass, copiously and carefully lined with fine dead grass. The eggs were very handsome, almost exact miniatures of the eggs of the Corn-Bunting. The ground-colour is pale grey, with bold twisted blotches and irregular round spots of very dark grey, and equally large underlying shell-markings of paler grey. They measure $\frac{31}{40} \times \frac{22}{40}$ of an inch.

I took the second nest in the forest on the opposite bank of the Koo-ray′-i-ka on the 29th of June, containing three eggs. These egg are somewhat less, measuring $\frac{28}{40} \times \frac{21}{40}$ of an inch. The colour is redder, being brown rather than grey, but the markings are similar. The nest was in a similar position, and the behaviour of the bird precisely the same. The third nest I took in lat. 67°, on the 30th of June. The eggs, five in number, were slightly incubated. The markings are similar to those of the eggs in the two preceding nests; but the ground-colour is browner, being less olive than in the first nest, and less red than in the second. The nest was lined with reindeer-hair. The fourth nest contained six eggs, and was taken a few miles to the north of the preceding, on the 6th of July. The eggs are intermediate in colour between those of the two nests last described. The character of the nest was similar to the last, but more sparingly lined with reindeer-hair. The tameness of the bird was the same in every instance.

The Little Bunting was common in the forest from the Arctic circle northwards, and afterwards on the tundra up to lat. 71°; but I did not observe it at Gol-cheek′-a, in lat. $71\frac{1}{2}$°, nor upon the Brek′-off-sky islands. There are skins of this bird in the St.-Petersburg Museum, collected by Baron Maydell in the Tschuski Land.

EMBERIZA SCHŒNICLUS, Linn.

The Reed-Bunting arrived on the Arctic circle on the 13th of June, and soon became very common. As we proceeded north we lost sight of this bird before we had quite reached the limit of forest-growth; but I got a sitting of its eggs in lat. 70½°.

EMBERIZA POLARIS, Midd.

On the 9th of June, four days before the arrival of the Reed-Bunting, a smaller and darker-coloured Bunting appeared. It was very shy and skulking in its habits, and I only secured one specimen. I afterwards added a second to my collection. It appeared to be a comparatively rare and local bird. I did not find it anywhere except on the banks of the Koo-ray′-i-ka. I looked for it in vain on the other bank of the Yen-e-say′, opposite the mouth of the Koo-ray′-i-ka, a locality where the Reed-Bunting was extremely abundant. The following measurements of a male, compared with a male of the common bird from the same locality, show that it is considerably smaller than the European Reed-Bunting, with a proportionately slightly longer tail. The figures are inches and decimals.

	E. schœniclus.	*E. polaris.*
Wing from carpal joint . .	3·25	2·83
Tail	2·7	2·5
Culmen	·43	·4
Tarsus	·75	·65

The distribution of colour in the two species is exactly the same, except that the margins of the feathers on the back, wing-coverts, and inner secondaries vary from rich chestnut to pale brown in the larger species, and from blue-grey to white in the smaller species. This is specially conspicuous on the wing-coverts near the carpal joint. On the smaller bird there is a trace of chestnut in the middle of the back and on the inner secondaries.

So far as I know, the male of this bird has never been described before; but I think there can scarcely be a doubt that it is the male of the bird described by Middendorff as *Emberiza* *polaris* in his 'Sibirische Reise,' ii. p. 146. This bird was described from a female, obtained by Middendorff about three hundred miles to the north-east of the locality where I procured my bird. He represents it as differing from the female of *E. schœniclus* in almost precisely the same characters which I have pointed out above as distinguishing the two males.

EMBERIZA AUREOLA, Pall.

I shot this very handsome and conspicuous bird for the first time on the Arctic circle on the 9th of June, but only occasionally saw it afterwards. This must be nearly its northern limit. On the return journey I shot it again at Yen-e-saisk′, in lat. 58°, in the middle of August, with scarcely fledged young. There are skins of this bird in the St.-Petersburg Museum, collected by Baron Maydell in the Tschuski Land.

EMBERIZA LEUCOCEPHALA, Gmel.

I shot one solitary bird of the Pine-Bunting on the Arctic circle on the 13th of June, but did not meet with it again.

EMBERIZA RUSTICA, Pall.

I did not meet with this bird until I reached lat. 62°, on my return journey.

PLECTROPHANES NIVALIS (Linn.).

In crossing the great steppes of South-western Siberia, between Tyu-main′ and Tomsk, we frequently came upon small flocks of Snow-Buntings. These birds seem to have no settled winter home; but during the cold weather they apparently live a roving gipsy life, wandering about in flocks, perpetually migrating northwards as fast as the frost and snow will let them, but continually forced to beat a retreat with every return of wintry weather. As we passed through Yen-e-saisk′ early in April, we were told that the Snow-Buntings had arrived just before us. When we reached the winter-quarters of the 'Thames,' on the 23rd of April, the sailors informed us that the Snow-Buntings had preceded us by a few days. Small flocks were constantly seen until the 7th of June. We saw no more of them until we reached Golcheek′-a, where we were in their breeding-grounds.

Plectrophanes lapponicus (Linn.).

The Lapland Bunting did not arrive at the winter-quarters of the 'Thames' until the 4th of June. It was breeding in great numbers on the tundra as far north as we went, *i. e.* lat. 71½°.

Alauda arvensis, Linn.

The only Skylark I saw was one which I shot at our winter-quarters on the 11th of June.

Otocorys alpestris (Linn.).

The Shore-Lark was common on the Arctic circle from the 2nd to the 11th of June. After we had passed the limit of forest-growth, and had reached the tundra, it was again common as far north as we went.

Anthus gustavi, Swinhoe.

Anthus gustavi, Swinhoe, P. Z. S. 1863, pp. 90, 273.

Anthus batchianensis, G. R. Gray, Hand-l. of Birds, i. p. 251. no. 3642 (1869).

Anthus seebohmi, Dresser, Birds of Eur. pt. xlv. (1875).

It is seldom that the history of an obscure bird is so suddenly and completely worked out as has been the case with this species during the last two years. The Siberian Pipit was first described by Swinhoe in 1863 (*loc. cit.*), from specimens obtained at Amoy, in South China, on migration. In 1871 (P. Z. S. p. 366) he announced its identity with *Anthus batchianensis,* based by G. R. Gray on skins collected by Wallace in Batchian. In 1874 (Ibis, p. 442) he announced the capture of no less than fourteen of these birds at Chefoo, during the spring migration, and mentions having seen one skin sent from Lake Baikal by Dr. Dybowsky. In 1875 Harvie Brown and I found it breeding in the valley of the Petchora, about lat. 67½° (Ibis, 1876, p. 120). Our skins were submitted to Dresser, who, believing the species to be undescribed, included it as a new species in the 'Birds of Europe' as *Anthus seebohmi.* In 1876 Finsch and Brehm procured a specimen in the valley of the Obb, a little to the north of the Arctic circle (Ibis, 1877, p. 58). In the same number of 'The Ibis' I had the honour, I will not say the pleasure, of pointing out the fact that *Anthus seebohmi* of Dresser was identical with *Anthus gustavi* of Swinhoe. Just before leaving for Siberia I was, by the kindness of Dr. Brüggemann, put in possession of the facts that *Anthus gustavi* had been procured in winter at Manilla (Brüggemann, Abhandl. Ver. Bremen, v. p. 67), Celebes (Brüggemann, *loc. cit.*; Walden, Tr. Z. S. viii. p. 117), Borneo, and Negros (*fide* skins in the British Museum).

During the arrival of migratory birds on the Arctic circle in the valley of the Yen-e-say', I naturally kept a sharp lookout for this interesting species, and was delighted on the 23rd of June to hear its peculiar and familiar song, and to shoot a fine male. On the 15th of July, in lat. 70½°, I met with this bird breeding, and obtained a sitting of its eggs. On the 26th of July, on my return journey, in about the same latitude, I found it breeding in considerable numbers, and secured eight specimens more.

In the Museum of St. Petersburg I had the pleasure of identifying skins of this species collected by Baron Maydell in the Tschuski Land, north of Kamtchatka, and on Behring Isle, to the east of that peninsula, collected by Wossnessensky; so that it would appear that the geographical distribution of this Pipit is almost the same as that of *Phylloscopus borealis.*

ANTHUS CERVINUS, Pall.

The Red-throated Pipit was first seen on the banks of the Koo-ray'-i-ka on the 6th of June. One of the birds which I shot on that day was in winter plumage, with scarcely a trace of vinous on the throat; and I entered it in my journal as the sole example of *Anthus pratensis* which I met with in the valley of the Yen-e-say'; but in St. Petersburg Russow pointed out to me the difference between the plumage of *Anthus pratensis* and the winter plumage of *A. cervinus.* In the latter bird the central large under tail-covert has a dark streak up the middle near the shaft. I have examined the whole of my large series of these birds from Norway, Russia, and Siberia, and winter skins of *A. cervinus* from Asia Minor and China, and find that in every case where the large under tail-covert has not been shot away this distinction holds good. This bird breeds in considerable numbers on the tundra as far north as we went. There is a great variation in the colours of the eggs in the same nest, some being much darker than others. There are skins of this bird in the Museum at St. Petersburg, collected by Baron Maydell in the Tschuski Land.

ANTHUS RICHARDI, Vieill.

Richard's Pipit must breed in great numbers on the extensive meadow-lands which stretch away for miles from Yen-e-saisk′ on the banks of the river. I found it common there in the middle of August, and shot both adult birds in full moult and young in first plumage. This bird has a habit of hovering over the ground almost exactly like a Kestrel.

ANTHUS TRIVIALIS (Linn.).

I did not meet with the Tree-Pipit until I reached lat. 62° on my return journey.

MOTACILLA ALBA, Linn.

Motacilla alba, Linn. Syst. Nat. i. p. 331 (1766).
Motacilla dukhunensis, Sykes, P. Z. S. 1832, p. 91.
Motacilla baicalensis, Swinhoe, P. Z. S. 1871, p. 363.

I think there can be no doubt that *M. alba* and *M. dukhunensis* are the same species. The only difference seems to be in the amount of white on the wing-coverts. *M. alba* has dark grey or black wing-coverts, more or less broadly edged with white. In *M. dukhunensis* the inside half of each wing-covert is the same as in *M. alba;* but the outside half is entirely white, making the wing-coverts, as they lie on the wing overlapping each other, an entirely white mass. This latter form seems to be confined to Siberia and India; but as in both these countries a complete series of intermediate forms occur also, we cannot consider the eastern form more than a variety. The amount of white on the wing-coverts of many of the species in this genus, and in some of them the amount of white on the secondaries, varies so much, that if we were to admit it as a specific character we should at once more than double the number of supposed species.

In the valley of the Yen-e-say′ both varieties were equally common. I only found the extreme white-winged form among the males.

This Wagtail was the first thin-billed bird to arrive on the Arctic circle in any numbers. The first break up of the ice on the 1st of June was the signal of its appearance. I found it as far north as we went, *i. e.* lat. 71½°.

The geographical distribution of this bird is very curious. As Middendorff did not find it, we may take the watershed between the Yen-e-say′ and the Lay′-na as its eastern boundary, whence it extends westwards as far as the Atlantic on the continent of Europe, but only appears accidentally in the British Isles. As you ascend the Yen-e-say′ from the Arctic circle, this bird abounds on the banks of the river until you near Yen-e-saisk′ (about lat. 59°), when suddenly it disappears, and its place is taken by *M. personata*. From Yen-e-saisk′ to Kras-no-yarsk′, and westwards until you cross the meridian of Calcutta, *M. personata* abounds, after which, across Siberia and Europe, you find no white Wagtail but *M. alba*.

There appears, however, to be a colony of *M. alba* still further to the east. Middendorff had a skin sent him from Birjussa, about halfway between Yen-e-saisk′ and Lake Baikal; and there is no doubt that it is a common bird in the neighbourhood of that lake, as skins collected in that locality by Dr. Dybowsky are not rare in collections. From this colony these birds migrate in great numbers across Mongolia and the extreme west of China, and doubtless find their way thence to India.

MOTACILLA PERSONATA, Gould.

This is a very well-marked species, differing from *M. alba* in having the black on the breast confluent with the black on the neck. Well-marked examples show even more white on the wing-coverts than in the most marked *M. alba*, var. *dukhunensis*, whilst others are similar in this respect to typical

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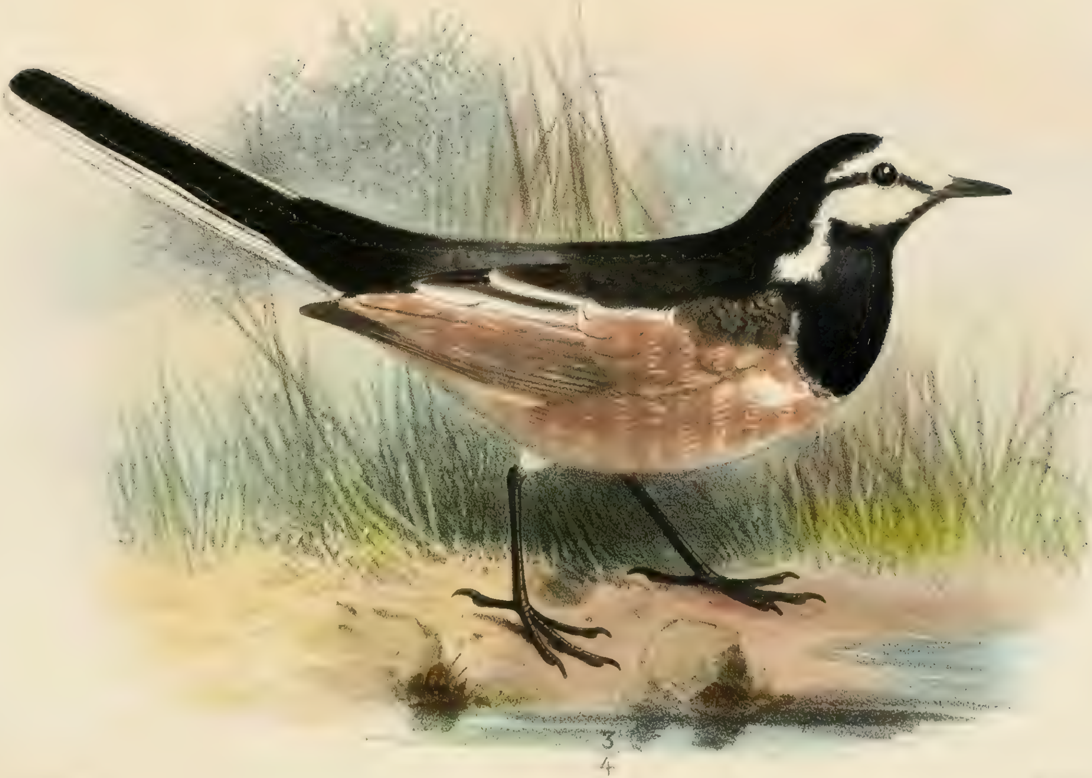

J. Smit lith.

Hanhart imp.

MOTACILLA AMURENSIS.

examples of the European form of *M. alba*—an additional proof that this character cannot be deemed specific in the Wagtails. I did not meet with this bird until my return journey. The particulars of its geographical distribution in Siberia, so far as I had an opportunity of observing it, are given under the head of *M. alba.*

MOTACILLA OCULARIS, Swinhoe.

Motacilla ocularis, Swinhoe, P. Z. S. 1863, p. 17.

Motacilla alba, Linn., var. *lugens*, Ill. Midd. Sib. Reise, ii. p. 166 (1851, nec Ill. nec Temm.).

Motacilla baicalensis, var. *temporalis*, Swinhoe, P. Z. S. 1871, p. 363.

In the Museum at St. Petersburg I had an opportunity of examining several skins collected by Middendorff in North and East Siberia labelled *Motacilla lugens.* They all proved on examination to be *Motacilla ocularis*, a grey-backed pied Wagtail, with a black patch on the hind crown extending to the nape, and another on the throat and breast. It differs from *Motacilla alba* in having a narrow black line extending from the centre of the black patch on the head, and passing through the eyes to the base of the bill. In the same museum were skins of *M. ocularis* from the Amoor, collected by Schrenck, from Mongolia, collected by Prjevalski, and from the Tschuski Land, collected by Maydell. I did not meet with this species on the Yen-e-say′; and probably the watershed between that river and the Lay′-na is its western boundary.

MOTACILLA AMURENSIS, sp. nov. (Plate IX.)

Motacilla alba, var. *lugens*, v. Schrenck, Amur-Lande, i. p. 338.

In the present condition of ornithological literature, loaded with synonyms, any one who adds a name to the almost exhaustless list is guilty of a crime; but where the species proves to have been undescribed before, his fellow ornithologists will admit that he has a right to plead "extenuating circumstances." I am afraid I shall be unable to complete my list of Siberian Wagtails without describing a skin in my collection, obtained through Schlüter of Halle, dated 14th April, 1876, from the Gulf of Abrek, in the Sea of Japan, labelled *Motacilla ocularis* ♂. The head, neck, and back are black, gradually fading into grey on the rump, which becomes black again on the upper tail-coverts. The throat, breast, and a line through the eye are also black. Forehead and cheeks, and a line behind the eye and on the side of the neck, white. Shoulders grey. Wing-coverts white. Inner secondaries broadly edged with white on the outside web. Primaries and secondaries broadly edged with white near the base of the inner web.

This bird is undoubtedly the *Motacilla alba*, var. *lugens*, of Schrenck, who describes it as common in the Amoor, and considers it an intermediate form between *M. japonica* and *M. ocularis*. There seems to be no alternative but either to describe it as a new species, or to regard it as a hybrid between the two species just named. I have preferred the former course as the least evil of the two. From *M. ocularis* it may at once be distinguished by its black back, and from *M. japonica* by its grey secondaries.

In Dresser's collection is a skin of this bird from Japan, a male, collected by Whitely, 17th April, 1865; and I have a skin collected by Wossnessensky on the 23rd of April, 1845, upon "Oorogan Island," possibly either one of the Kurile or one of the Aleutian Isles.

MOTACILLA ALBOIDES, Hodgs.

Motacilla alboides, Hodgson, As. Res. xix. p. 191 (1836).

Motacilla leucopsis, Gould, P. Z. S. 1837, p. 78.

Motacilla luzoniensis, auctt. nec Scop.

Motacilla alba, var. *paradoxa,* Schrenck, Reis. u. Forsch. im Amur-Lande, i. p. 341 (1860).

Motacilla felix, Swinhoe, P. Z. S. 1870, p. 121.

There are five species of white Wagtails found in India. Two of these are resident species, *M. maderaspatana,* hereafter alluded to, and *M. hodgsoni,* which may be described as a black-backed *M. personata.* Of the remaining three we have already disposed of the breeding-places of two, *M. personata* and *M. alba*, or, as the Indian bird is generally called, *M. dukhunensis*. The remaining species, *M. luzoniensis*, inhabits the eastern plains of India in winter. Swinhoe has clearly pointed out (P. Z. S. 1870, p. 120) that this bird has no right to the name *luzoniensis*. Scopoli founds his name upon "La Bergeronette à collier de l'île de Luçon" of Sonnerat, in his 'Voyage à la Nouvelle Guinée,' vol. i. p. 61, pl. 29. Sonnerat describes the colour of the back as "gris de cendre," and figures a Wagtail with a grey back, very white wing-coverts, a white forehead, cheeks, and throat, but with a gorget of black on the breast confluent with the black on the neck and head. It might represent a female of *M. hodgsoni*, or a male of *M. personata* in winter plumage; but inasmuch as no white Wagtail has been recorded since from this locality, I think we are perfectly justified in cutting the Gordian knot by ignoring the name altogether.

M. alboides is in summer a black-backed Wagtail with a black breast. The forehead is white, and a white band separates the black on the head and neck from the black on the breast, as in *M. alba*; but besides the black back, it differs from *M. alba* in never having the throat black. In winter the back is more or less grey, but the shoulders remain black.

I think there can be no doubt whatever that this bird is the *Motacilla alba*, var. *paradoxa* of Schrenck, who figures it and describes it as breeding in the Amoor-land.

MOTACILLA LUGENS, Temm. et Schl.

Motacilla lugens, Temm. et Schl. Fauna Japonica, Aves, p. 60, pl. 25 (1850).

Motacilla japonica, Swinhoe, Ibis, 1863, p. 309; P. Z. S. 1863, p. 275.

After having just stated that the amount of white on the wing of a Wagtail cannot be considered a specific character, it may appear somewhat paradoxical to assert that the principal and most trustworthy character of this bird is the great amount of white on the wing. In this species, however, it is not only the wing-coverts, but the secondaries and some of the primaries which are more or less white. *M. lugens* may always be recognized by some of the secondaries being white across both webs, and frequently one or two of them are pure white throughout. The amount of white on the primaries varies very much. In summer this species comes very near *M. maderaspatana,* having a black back, and the white on the head being confined to the forehead and supercilium. On the average *M. lugens* is a smaller bird than *M. maderaspatana*; but large skins of the former species measure more in length of wing than small skins of the latter species. In *M. maderaspatana* the black on the head comes down in a peak to the base of the bill. *M. lugens* has a pure white forehead, the black on the head not approaching within half an inch of the base of the bill. This appears, however, not to be a perfectly stable character, as I have a skin in my collection of the last-named species from Hakodate, in which the black of the forehead comes down in a peak to the base of the bill, as though a not very remote ancestor of this individual had migrated to India instead of China for the winter, and had there intermarried with one of his cousins, as our friends the Crows are in the habit of doing. In winter *M. lugens* comes very near to *M. ocularis.* Both species have then grey backs, black heads, a gorget of black on the throat, and a black line passing from the base of the bill through the eye, and joining the black at the back of the neck. *M. ocularis* is, however, a grey-backed Wagtail, both summer and winter, and has a grey shoulder; whereas *M. lugens* loses the black on the back in winter, but retains it on the shoulder the whole year. Independently of these minor differences, the amount of white on the primaries and secondaries of *M. lugens* serves to distinguish it easily at all seasons of the year.

The geographical distribution of this species, so far as I have been able to ascertain it, from the examination of well-authenticated skins, appears to range from Kamtchatka to Japan in summer, and in winter along the coast of China and the opposite islands, Formosa, &c. I can find no evidence of its having been found further west. The skins in Dresser's collection, collected by Severtzoff in Turkestan (Ibis, 1876,

p. 177), are *M. hodgsoni.* Middendorff's skins of *M. lugens* in the St.-Petersburg Museum are *M. ocularis.* In the same museum there is, however, a fine series of skins of the true *M. lugens* from Kamtchatka.

The synonymy of this bird, simple as it appears, is most bewildering. We have the authority of Mr. Hume ('Stray Feathers,' v. p. 434) for the assertion that, in the opinion of Professor Alfred Newton, "nomenclature bears the same relation to real natural history that rat-hunting does to real sport." Be this as it may, I do not know any one fonder of a "rat-hunt" of this kind than Professor Newton. In his article on the Pied Wagtail, in his new edition of Yarrell's 'British Birds,' we have an excellent *résumé* of a day's "rat-hunting." The first rat he starts is *Motacilla lugubris,* Pallas, and after running it through the fourth and third parts of Temminck's 'Manual of Ornithology,' he finally loses the scent in the first part in 1820 (ed. 2, p. 253). The description here given being that of a bird which, in Professor Newton's opinion, is "unquestionably identical" with the British Pied Wagtail, that bird becomes *M. lugubris,* Pallas, apud Temminck; and since there is no evidence that Pallas ever gave the name of *M. lugubris* to any Wagtail, our British bird becomes *M. lugubris,* Temminck. The next "rat" that Professor Newton starts is *M. lugens,* Illig. This, he tells us in a footnote (*loc. cit.*), he chased as far back as 1850, where he suddenly lost the scent in the 'Fauna Japonica.' I must confess that my attempts to run down this animal have been still less successful. I started it in Oustalet's 'Oiseaux de la Chine' (p. 300), where I was at once tripped up by two errors ("F. Jap. Aves, 25," should read "F. Jap. Aves, p. 60, pl. 25"; and "Swinh. (1860) 357," should read "Swinh. Ibis, 1860, p. 357"). I picked up the scent again in the P. Z. S. 1870, p. 130, and stumbled on two more errors ("P. Z. S. 1863, p. 17," ought to be "P. Z. S. 1863, p. 275," and "Ibis, 1863, p. 85," ought to be "Ibis, 1863, p. 309"). Recovering myself, I pursued the trail through Schrenck's 'Amur-Lande,' 1860, with only a slight mishap (the page in Pall. Zoogr. Rosso-Asiat. i. intended to be referred to is 507, not 307), and I lost the scent altogether in Middendorff's 'Sibirische Reise,' p. 166 (1851). Since Professor Newton has not been able to kill this rat, as, I think, we may fairly infer from the footnote already referred to (Newton's 'Yarrell,' i. p. 541), I am driven to the conclusion that "*lugens*, Ill.," and "*lugubris*, Pall.," quoted by Middendorff, are both myths. My next attempt was to try and catch a *M. lugens* of Pallas, or of any body else. I had nearly as many stumbles in this as in the previous runs. In the 'Fauna Japonica' Schlegel gives a reference to Temminck's 'Manuel' as "part iii. p. 620," which ought to be read "part iv. p. 620," an error which I found he had previously made in his 'Rev. Crit. des Ois. d'Eur.' p. 68. In spite of these difficulties I did not lose the scent until 1832, where, so far as I have been able to trace it, *M. lugens*, Pallas, appears for the first time in Kittlitz's 'Kupfertafeln zur Naturgeschichte der Vögel,' p. 16, pl. 21. fig. 1, from Kamtchatka.

From this peninsula there is fortunately a series of skins in the St.-Petersburg Museum, which I had an opportunity of examining, and which I identified as *M. lugens* of Temm. & Schl. Kittlitz describes his bird as the commonest summer bird in Kamtchatka, and remarks that in autumn it has a white throat, bounded beneath by black, and an ash-grey back. The description is very meagre, and the plate of the bird in breeding-dress represents a state of plumage which I have not seen. The throat is in full summer plumage, *i. e.* black to the base of the bill, but the cheeks remain in winter plumage. A reference to the excellent plate of *M. lugens* in the 'Fauna Japonica' (pl. 25) will show that in full breeding-plumage the black on the throat extends up to, and forms one mass with, the black line through the eye.

We must admit that the description and also the plate of *M. lugens*, Pallas, apud Kittlitz, are scarcely as satisfactory as we could have wished upon which to found a species; but as the Japanese bird is the only Pied Wagtail hitherto found in Kamtchatka, there is at least a strong probability that Kittlitz's name refers to this bird. There is no evidence to prove that Pallas ever named a bird *M. lugens*. *M. lugens*, Pallas, apud Temminck (Man. d'Orn. iv. p. 620), is identified with *M. lugubris* (Man. d'Orn. iii. p. 175), which undoubtedly includes the Japanese bird. Our bird therefore stands as *M. lugens,* probably of Pallas apud Kittlitz, partly of Pallas apud Temminck, certainly of Temminck and Schlegel. Since it only involves a change of authority and not of name, this seems to me to be a case in which we may safely avail ourselves of the strict letter of the rules of nomenclature, and call our bird *Motacilla lugens,* Temm. et Schl., on the ground that this name was "clearly defined" for the first time in the 'Fauna Japonica,'—rejecting also Swinhoe's name of *M. japonica,* as having been subsequently given, under the erroneous impression that the name *M. lugens* "had already been applied to the very different western species" (*vide* P. Z. S. 1870, p. 130).

It is somewhat remarkable that such an eventful day's "rat-hunting" should end without a kill, that of the three rats started (*M. lugubris,* Pall., *M. lugens,* Pall., and *M. lugens,* Illig.) every one should be run to earth, and that there is the strongest probability that all the three "rats" are phantom rats, myths. It is still more remarkable that the references to these names should be quoted with so many blunders; but perhaps the most remarkable circumstance of all is, that Professor Newton, in the note already twice referred to, should have "made another complication" by starting a fourth phantom rat, *M. lugens,* Illig. apud Schlegel*.

MOTACILLA FLAVA, Linn.

I shot a solitary example of the Blue-headed Wagtail with the white eye-stripe on the 11th June, on the Arctic circle. This bird had probably accidentally migrated with the large flocks of *M. viridis* beyond his usual latitude.

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* Since the above was written, Professor Newton has pointed out to me that in all probability it was Bonaparte who first ascribed the name "*lugens*" to Illiger in 1850, the correctness of which statement Middendorff no doubt took for granted in 1851. Professor Newton desires to correct his footnote (Newton's 'Yarrell,' i. p. 541) as follows:—". . . . and the Japanese form therein appeared as '*M. lugens,*' a name ascribed by several writers, and amongst them Bonaparte (Consp. Av. i. p. 250), to Illiger; but whether . . . ."

Motacilla viridis, Gmel.

The Grey-headed Wagtail arrived in flocks on the Arctic circle on the 5th of June, and soon became extremely abundant. It does not seem to extend its range beyond the limit of forest-growth, and disappeared about lat. 69°.

Motacilla citreola, Pall.

This beautiful bird was the first of the yellow Wagtails to arrive at our winter-quarters. I secured the first example on the 4th of June, and afterwards found it very abundant on the tundra as far north as we went.

Motacilla melanope (Pall.).

One solitary example of the Grey Wagtail fell to my gun on the 6th of June. As this is the first time that this bird has occurred within the Arctic circle, so far as I am aware, it may be looked upon as an accidental occurrence. I may remark that my bird, with a tail measuring 3·75 inches, is intermediate in form between the eastern and western varieties.

[To be continued.]

XXIV.—*Notes on a 'Catalogue of the* Accipitres *in the British Museum,' by* R. Bowdler Sharpe (1874). By J. H. Gurney.

[Continued from p. 164.]

Before referring to the genus *Helotarsus,* to which I shall next have occasion to advert, I am desirous of briefly noticing an additional specimen of *Circaëtus cinereus* which has recently been acquired by the Norwich Museum.

This example, which is from Abyssinia, agrees closely in coloration with that from Nubia described in my last paper (*anteà,* p. 162, no. 18), and, like it, has no white bases to the feathers on the under surface.

Its principal measurements are :—Wing 22·2 inches, tarsus 3·9, middle toe *s. u.* 2·4, culmen 2·1.

I have already mentioned that I consider the genus *Helotarsus* to be an abnormal member of the Circaëtine group; and I am desirous of offering a few remarks upon it, as supplementary to those contained in Mr. Sharpe's volume.

The geographical range of *H. leuconotus* is stated by Mr. Sharpe to be "North-Eastern and Southern Africa;" but it also extends to Senegal, an adult specimen from Bissao being preserved in the Norwich Museum. There seems, in fact, to be but little, if any, difference between the geographical ranges of *H. leuconotus* and *H. ecaudatus*; and Mr. Sharpe remarks that the former "is perhaps the fully adult bird" of the latter; but in this view I am not disposed to agree, as many specimens have been kept in confinement in this country, amongst which I have never heard of one having changed from a rufous back to a cream-coloured, or *vice versâ**. I ought, however, to add that in an adult specimen of *H. leuconotus*, which I recently examined in the Strickland Collection at Cambridge, there is a decided appearance of faded rufous on the tail, though not on the back.

Von Heuglin has some noteworthy remarks on this subject in his 'Ornithologie Nord-Ost Afrika's,' vol. i. p. 80, of which the following is a translation:—"Specimens with white back and tail are found in the whole of Africa. Vierthaler observed the transition through moulting from the red-brown- to the white-backed bird, whilst I have shot a newly-moulted one of the last-named plumage the dorsal feathers of which were only partly grown, but these also showed the white plumage. We also saw plainly, several times, pairs of the white-backed variety. Most of the specimens we found on the White Nile and in Kordofan were white-backed; the Abyssinian birds were all brown-backed."

I venture to think that Vierthaler's note, referred to in the above extract, only implies that he had observed a specimen in confinement to change from the immature brown plumage to the white-backed adult dress, and not from the rufous-backed adult plumage to the white-backed. The following is a translation of Vierthaler's memorandum on the subject, which was made during his journey on the Blue Nile, and which, it must be admitted, is not so precise as could be

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[* In the Zoological Society's Gardens are two red-backed specimens, received in 1873, which show no signs whatever of change into the white-backed form.—Edd.]

wished :—"Upon a *Helotarsus ecaudatus* I could to-day distinctly recognize white shoulder-feathers (*H. leuconotus*, Pr. Paul of Würtemberg). This, however, as I can with perfect certainty assert, is nothing but a variety of age. Ulivi, a merchant at Chartum, has for more than a twelvemonth kept such a bird in confinement. It appeared to me to be two years old, and has, in its last moult, from February to April, also obtained white shoulder-feathers, which before were wanting." (*Vide* 'Naumannia,' 1852, p. 50.)

I regret that I can throw no further light upon this question; but I may add that, according to my observation, the creamy-backed specimens (*H. leuconotus*) are more rarely sent to this country than the rufous-backed (*H. ecaudatus*), and especially so from Southern Africa, where *H. leuconotus* appears to be scarcer than it is to the north of the equator.

Both in *Helotarsus ecaudatus* and also in *H. leuconotus* the colouring of the wing is subject to a curious difference in adult specimens, which is not referred to by Mr. Sharpe, but which has engaged the attention of various other ornithologists, though hitherto without its being satisfactorily accounted for. This difference may be briefly described as follows :—In some adults all the secondary feathers are black, tinged with green on the outer and with brown on the inner webs, and the greater coverts are of an intense black, without an apparent tinge of any other colour; whilst in other adults the greater coverts are, with the exception of more or less black on some of the feathers, coloured like the lesser and median coverts, *i.e.* a lustrous stone- or wood-brown, and the secondaries (except those nearest the body, which are either black or brown more or less tinged with black) are of a greyish brown colour with black tips, the grey-brown forming a conspicuous bar across the folded wing.

The late Jules Verreaux considered this greyish bar to be peculiar to the female bird; and the following note on the subject is extracted from a letter which he wrote to me in the year 1864 :—"Quant au sujet de l'*Helotarsus*, vous n'ignorez pas, sans doute, la différence immense qui existe dans les ailes entre les sexes; la femelle a les remiges secondaires presque entièrement nuancées de gris, tandis que le mâle n'en a guère que les couvertures; j'en ai tué cent fois et je m'en suis assuré sur la nature."

Verreaux's view appears to have been in great measure shared by Finsch and Hartlaub, who, at p. 52 of their 'Vögel Ost-Afrika's,' speak of the female of *H. ecaudatus* as distinguished from the male "areâ alari griseo-brunneâ multo majore."

The late Sir Andrew Smith, on the contrary, when describing this species in the 'South-African Quarterly Journal,' referred to the grey-barred wing as common to both sexes; and in this view he is followed by Mr. Sharpe, though not, as I understand, on the authority of dissected specimens.

Von Heuglin, who has given a useful figure of each of these phases of plumage on tab. ii. of his 'Ornithologie Nord-Ost Afrika's,' also appears not to have considered the banded wing peculiar to the female, but seems to have been unable to satisfy himself as to the true significance of this difference.

Prof. Barboza du Bocage is disposed to consider the difference in question to be due to age, and remarks, at p. 42 of his work on the Birds of Angola, "nous croyons, d'après ce que nous avons pu observer sur des individus vivants de cette espèce, que les remiges secondaires, d'abord toutes noires, deviennent, avec le progrès de l'âge, grises marquées d'une bande terminale noire."

I cannot say that I agree with this view, as I have seen no such change in progress in the living birds which have come under my notice in this country, and as I think that I have been able to trace in some of the skins which I have examined a passage from the immature dress to the black-winged phase in some individuals, and to the grey-winged in others.

My own observations have been too limited to be of much service in deciding the question at issue; but, as far as they go, they tend to confirm the view held by M. Verreaux.

I have had no opportunity of examining an adult male the sex of which I was able to feel certain had been verified by dissection; but I have examined four adults ticketed as females, in regard to all of which there is reasonable ground for believing that the sex had been so verified, and all of which exhibit the grey bar across the wing. Of these four females, one, now preserved in the Norwich Museum, was obtained in Natal by Mr. Ayres, who marked it as a female; a second, also ticketed as a female, died at Knowsley, and is now in the Derby Museum at Liverpool; and the two others, both marked as females by the collectors, and preserved in the British Museum, were obtained, the one by Mr. Petherick in Kordofan, the other by Mr. Blanford at Bedjak in Abyssinia. This last specimen, I may add, has, by a clerical error, been entered in the list of specimens, at p. 301 of Mr. Sharpe's volume, as a male.

In conclusion, it may be useful to note that, in both editions of Mr. Layard's 'Birds of South Africa,' an error has by some accident crept into the account there given of the adult plumage of *H. ecaudatus*, which is described as having "the lesser wing-coverts rufous." They are always, so far as I have observed, of a lustrous stone-coloured brown, darker in some individuals than in others, but never in any degree rufous.

[To be continued.]

XXV.—*Preliminary Remarks on the Neotropical Pipits.*

By P. L. Sclater, M.A., Ph.D., F.R.S.

(Plate X.)

If the Pipits of the Palæarctic Region, and even those of Europe, are not yet fairly understood, as would seem evident by what has been lately written on them by Mr. Seebohm, Mr. Dresser, and other ornithologists, how much less likely is it that we should be well acquainted with those of South America? The latter are indeed in a sad state of confusion; and though I have been collecting American Pipits for many years, and endeavouring to get together a good series of specimens from authentic localities, it is only now that I feel in a position to improve matters a little by putting forward the conclusions I have come to in the shape of a preliminary revision of such of the species as are found within the limits of South and Central America.

I may state that my remarks are based mainly upon the specimens in my own collection (which are 33 in number, and embrace examples of all the species recognized in this paper), and on those in the collection of Messrs. Salvin and Godman.

But I have also examined the specimens in the Jardin des Plantes at Paris; and I have much to thank M. Taczanowski (of Warsaw), Hr. von Pelzeln (of Vienna), Mr. J. A. Allen (of Cambridge, Mass.), and Prof. Baird (of Washington) for the valuable assistance they have rendered me by the loan of specimens from the several collections under their charge respectively.

We will first clear off the Nearctic Pipits by saying that only two birds of this group are as yet known to be found within that region, namely *Anthus ludovicianus* and *Neocorys spraguii**. Of these only *Anthus ludovicianus* intrudes into the Neotropical Region, extending as far south as Guatemala†.

Besides *Anthus ludovicianus*, I am able to recognize only *six* distinct species of Neotropical *Anthi*, which I now proceed to discuss as follows:—

1. ANTHUS BOGOTENSIS.

Anthus rufescens, Lafr. et D'Orb. Syn. p. 27; D'Orb. Voy. p. 226 (nec *A. rufescens*, Temm.).

Anthus bogotensis, Scl. P. Z. S. 1855, p. 109, pl. 101, et p. 144, 1858, p. 550, et Cat. A. B. p. 24; Baird, Rev. A. B. p. 157; Scl. et Salv. P. Z. S. 1870, p. 780 (Merida); Tacz. P. Z. S. 1874, p. 509 (Peru); Wyatt, Ibis, 1871, p. 322 (paramo of Pamplona).

This is a very well-marked and unmistakable species, distinguished at once from its congeners by its dark rufous colour above, variegated with black, by the uniform cinnamomeous rufous below, with only a few stripes on the breast and fore neck, and especially by the "wing-end" being formed by five primaries instead of four, the fifth primary being but slightly shorter than the first four, which are equal and longest*.

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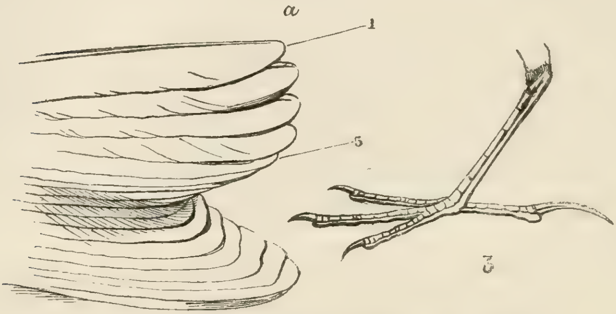
* The European *Anthus pratensis* has occurred accidentally in Greenland, and at Norton Sound, Alaska. *Cf.* Baird, Brewer, and Ridgway, 'North American Birds,' i. p. 173.

† Salvin, 'Ibis,' 1859, p. 9.

Fig. 1.



a. Wing-end of *Anthus bogotensis*, from within.
b. Foot of ditto.

This Pipit appears to be exclusively an inhabitant of the grassy districts on the higher Andes. It was first discovered by D'Orbigny in Bolivia, on the grassy plateau of Biscachal, not far from Carcuata, in the province of Yungas, at an elevation of about 10,000 feet above the sea-level. I have examined D'Orbigny's type in the Paris Museum. Mr. Buckley obtained specimens at Sical, in Bolivia, which are now in Salvin and Godman's collection. Mr. Jelski met with it at Maraynioc and Junin, in Central Peru; one of his skins is in my collection. Mr. Fraser obtained a single example (also in my collection) in June 1858, in Ecuador, near Titiacun, high up on the volcano El Altar, "running on the ground amongst the grass;" and I have other examples from the district of Quito. Further north Mr. Wyatt obtained the same species on the Paramo of Pamplona, U. S. of Columbia, and Mr. Goering near Merida, in Venezuela, "in the upper Paramo region;" so that it is doubtless widely distributed over the higher Andes of South America.

My original description of *Anthus bogotensis* was based upon "Bogota" skins, of which I have seen many. I have retained the name, although subsequent to D'Orbigny's, so as to avoid the confusion of this species with *Anthus rufescens* of Temminck.

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* *Cf.* Baird (Rev. Am. Birds, p. 157), who has consequently made this species the type of his genus *Pediocorys.*

2. ANTHUS CHII.

El chií, Azara, Apunt. ii. p. 6, no. cxlvi.

Anthus chii, Vieill. N. D. xxvi. p. 490, et E. M. p. 326 (?); D'Orb. Voy. Ois. p. 225 (?); Darwin, Zool. Beagle, iii. p. 85 (?); Licht. Doubl. p. 37 (certè).

Anthus rufus, Pelz. Orn. Bras. p. 69.

Anthus turdinus, Merrem, Ersch u. Grub. Enc. iv. p. 290 (ex Azara).

It is of course quite impossible to say positively what the "Chií" of Azara, and consequently the *Anthus chii* of Vieillot, may have been. All we can decide from Azara's description is that the "Chií" (thus designated by him from its note when it descends to the ground from the air) is a second species of Paraguayan *Anthus,* smaller than the "Correndera"*. By many authors *A. chii* has been considered to be the same as the next species. But the specimen which I received some years ago, in exchange from the Berlin Museum, under this name, and which is consequently, at all events, the *A. chii* of Lichtenstein, is not identical with the little *A. rufus,* but is decidedly larger and distinct.

Anthus chii, then, if this be its correct name, is a bird much resembling *A. bogotensis,* but decidedly smaller in size. The under surface is nearly uniform pale fulvous, paler on the throat and belly, but not passing into white or yellowish white on the latter part as in *A. rufus.*

Besides the specimen received from Berlin, as above mentioned, which was collected by Sello in Southern Brazil or Uruguay, I have seen but two examples of this species, both bearing Natterer's number 463. Of one of them in my own collection the exact locality is not marked; the other, which Hr. v. Pelzeln has kindly lent me, is from Curytiba.

This is consequently the "*Anthus rufus,* Gmel.," of Pelzeln, but not the *A. rufus* commonly so called. Natterer met with it on the steppes (*i. e.* campos) of Inner Brazil, near Curytiba, and says that its song is different from that of the Rio bird, which dwells in the swamps (*i. e.* the next species)*. In both my specimens the wings are not quite perfect; but, so far as I can judge by them, the fifth primary is but very slightly shorter than the fourth (as in *A. bogotensis*); and this is decidedly the case in the skin belonging to the Vienna Museum.

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* Length $4\frac{5}{8}$, instead of $5\frac{5}{8}$ Spanish inches.

The dimensions of the three specimens are as follows:—

	Long. tota. in.	Alæ. in.	Caudæ. in.	Dig. post. lin. dir. in.
a. Mus. P. L. S. ex Mus. Berol. (*Sello*)	4·9	2·8	1·9	. .
b. ———— (*Natt.*)	5·2	2·9	2·2	·4
c. Mus. Vindob. (*Natt.*)	4·9	2·9	2·2	·4

On the whole, I think it extremely probable that this species is the true "Chií" of Azara, as it is much more likely that this bird of the Pampas should occur in Paraguay than the next-following species, which has not yet been recognized so far south.

3. ANTHUS RUFUS.

Le variole, Buff. Hist. Nat. v. p. 348.

Petite alouette de Buenos Ayres, Buff. Pl. Enl. 738. fig. 1.

Alauda rufa, Gm. S. N. i. p. 798.

Alauda bonariensis, Bonn. Enc. Méth. p. 317 (ex Buffon).

Anthus rufus, Merrem, Ersch u. Grub. Enc. iv. p. 290; Burm. Syst. Ueb. iii. p. 118; Lawr. Ann. L. N. Y. vii. p. 322; Baird, Rev. A. B. p. 156; Scl. et Salv. P. Z. S. 1868, p. 173, et p. 568 (W. Peru).

Anthus parvus, Lawr. Pr. Ac. Phil. 1865, p. 106; Salv. P. Z. S. 1867, p. 135.

Anthus chii, Spix, Av. Bras. i. p. 75, pl. lxxvi. fig. 2 (?); Max. Beitr. iii. p. 631 (?); Pelzeln, Orn. Bras. p. 69 (certè); Scl. et Salv. P. Z. S. 1867, p. 569; Tacz. P. Z. S. 1874, p. 506 (Lima).

Anthus lutescens, Lesson, Tr. d'Orn. p. 424† (descr. nulla).

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* Pelzeln, Orn. Bras. *l. s. c.*

† *Cf.* Pucheran, Arch. d. Mus. vii. p. 343.

Anthus peruvianus, Nicholson, P. Z. S. 1878, p. 291 (?)

This little *Anthus* is at once recognizable by its small size, the wing barely exceeding 2½ inches in any specimens, and being generally less. It is with some hesitation that I continue to use for it the name "*rufus,*" bestowed by Gmelin upon the "*Petite alouette de Buenos Ayres,*" otherwise "*Le variole*" of Buffon. If the bird so designated was really obtained by Commerson upon the banks of the Rio de la Plata, as Buffon tells us, it is much more likely to have been *A. correndera*; and Burmeister has actually applied Gmelin's term to the latter species. But errors in locality are not very uncommon in Buffon's works, as every one knows; and, taking this view, I will continue to call this little species by the name applied to it by Messrs. Lawrence and Baird. This is the more convenient because I have just shown that the name *chii,* often used for it, most probably belongs elsewhere.

Anthus rufus, then, as we will call it, has an extensive range. It is not uncommon in Rio collections, and is, I believe, the only species found in that part of Brazil. Natterer obtained ten examples of it near Rio, "on the puddles in the roads and in the swamps" (no. 168 of his collection). In Salvin and Godman's collection is a skin forwarded from Bahia by Dr. Wucherer. Proceeding northwards, I have a skin of this species obtained by Mr. Wallace on the island of Mexiana, at the mouth of the Amazons, where, Mr. Wallace tells us, it is "tolerably plentiful on the open dry plains." From Guiana I have seen but a single immature specimen, in the collection of the Smithsonian Institution (no. 70,695). A single skin in my own collection is labelled Trinidad, but was perhaps obtained in the savannahs of the opposite coast of Venezuela, whence many "Trinidad" skins are certainly derived. I have also before me two specimens from Panama (one of which is the type of *A. parvus* of Lawrence) and one from Veragua; and I fully share Mr. Salvin's views (given P. Z. S. 1867, p. 135) as to the difficulty of separating these from Brazilian examples.

Going now to the west coast of South America, I have under my eyes three skins from Lima (*Nation*), and two from Southern Peru, Islay, and Arequipa (*Whitely*), which belong to the recently described *A. peruvianus* of Mr. Nicholson. After examining them, and considering the differential characters pointed out by Mr. Nicholson, I do not find these characters hold when the whole series is examined. In one of my Lima skins the outer tail-feathers are quite as white as in Brazilian specimens; and there is every variety as regards the white edgings of the wing-coverts, taking the series as a whole, though this feature is most pronounced in the Peruvian birds, and least apparent in the Central-American specimens. I admit that the yellow tinge of the abdomen is not apparent in the so-called *A. peruvianus*; but this is, in my opinion, not sufficient to found a species upon, and this tinge is likewise deficient in the Central-American skins.

The length of the hind claw in my ten specimens of this species varies from 0·50 to about 0·38 inch.

If the three forms of this species shall be ultimately established as distinct, it would be better to reject the term *rufus* altogether as void for uncertainty, and to use *lutescens* for the Brazilian form, *parvus* for the Central-American, and *peruvianus* for the Western bird.

4. ANTHUS CORRENDERA.

La correndera, Azara, Apunt. ii. p. 2.

Anthus correndera, Vieill. N. D. xxvi. p. 491, et E. M. p. 325; D'Orb. Voy. Ois. p. 225; Darwin, Zool. Beagle, iii. p. 85; Scl. Cat. A. B. p. 24; id. P. Z. S. 1860, p. 384 (Falklands), 1867, p. 321 (Chili), 1872, p. 548 (Rio Negro); Scl. et Salv. P. Z. S. 1868, p. 139 (Buenos Ayres); Hudson, P. Z. S. 1873, p. 771 (habits); Gould, P. Z. S. 1859, p. 95 (nest).

Anthus rufus (Gm.), Burm. La Plata-Reise, ii. p. 474.

Anthus —, Baird, Rev. Am. B. p. 158.

Corydalla chilensis, Less. Descr. d. Mamm. et Ois. p. 298.

Anthus calcaratus, Tacz. P. Z. S. 1874, p. 507 (?).

In Chili, Patagonia, and all over the pampas of Buenos Ayres this Pipit appears to be abundant. Mr. Hudson (*l. s. c.*) has given us an excellent account of its habits in the Argentine Republic, and says it is the only *Anthus* known to him there. I have an example obtained by him near Conchitas, a series of four from Santiago, Chili (*Landbeck*), and a single skin from the Falkland Islands, besides an odd Chilian specimen. In these birds, and in others now before me, there is considerable variation in the length of the hind claw; but as a general rule the hind claw is long and rather straight, measuring in the longest-clawed specimens 0·7 inch in a straight line from the base to the tip, but in others not quite reaching 0·5.

As a general rule, the second anterior rectrix in *A. correndera* is white at its tip; and this white colour is continued in a narrow line along the inside of the shaft, nearly down to the base of the feather, the shaft itself being white down quite to the base. But in a large series there will be found exceptions to this rule. In some cases the white line extends only halfway down the feather; and in one of my specimens (♂ adult, ex Chili, *Landbeck*) it extends only about a third down on one side, and two thirds on the other, which proves that this is a variable character.

Mr. Taczanowski has most kindly sent me for examination the type of his *Anthus calcaratus*. My impression is that this is a freshly-moulted example of the present species. The outer rectrix is wholly white, with a black patch on the inner web at the base; and the second rectrix is coloured quite after the usual pattern of *A. correndera*. The specimen is certainly rather more rufescent on the breast than any example of *A. correndera* I have seen; but I think this may be due to its recent moult, as is the case in other Pipits. In the length of the hind claw it is exceeded by some of Mr. Hudson's Buenos-Ayres specimens. The fifth primary is about equal to the first in length, the sixth being rather more than 0·2 inch shorter.

I have also carefully examined the two skins (21,035 and 26,362 of the Smithsonian Institution) described by Prof. Baird in his 'Review,' p. 158, but not named, and have come to the conclusion that they must be referred to this species.

I have no doubt that Prof. Baird is correct in supposing that the latter is of the same origin as the former (Uruguay), and did *not* come from any part of North America. These two specimens are peculiar in having the breast-spots nearly lineiform, and not expanded into arrow-heads. This is especially the case in no. 21,035. But I can very nearly match this in other skins. The hind claw in both specimens is rather short; and there is but a slight extension of the white line downwards in the second external rectrix. As regards the conformation of the primaries, upon which Prof. Baird lays so much stress, I find on examining a large series of *A. correndera* much variation in this part of the structure. The fifth primary is generally rather shorter than the first, and the second, third, and fourth nearly equal and longest. But in some skins the first primary fully equals, and even exceeds, the next three in length; and the fifth is then definitely shorter than the first four.

5. ANTHUS FURCATUS.

Anthus furcatus, Lafr. et D'Orb. Syn. Av. p. 27; D'Orb. Voy. Ois. p. 227; Darwin, Zool. Beagle, iii. p. 85 (La Plata).

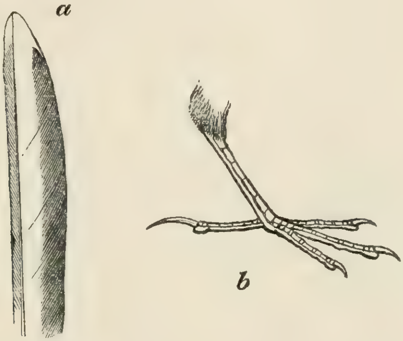
Anthus brevirostris, Tacz. P. Z. S. 1874, p. 507 (Peru).

I have compared one of Mr. Taczanowski's specimens of his *Anthus brevirostris* with the type of *A. furcatus* at Paris, and believe I may say that they belong to the same species. Whether, however, it will be ultimately possible to keep this form distinct from *A. correndera* I am not quite so certain. One of Mr. Hudson's skins from Conchitas in my collection and two others in the Smithsonian series, all marked "Cachila" by Mr. Hudson, and not distinguished by him from *A. correndera*, certainly cannot be separated from *A. furcatus*.

The characters of this species (if, as I say, it is to be kept distinct) are the smaller bill, short and more curved hind claw, less spotted under surface, and different markings of the second outer rectrix. There are slight variations in all these points, which render it difficult, to say the least of it, to decide in every case to which of the two species a particular specimen is to be referred, though when two such extremes are compared as Taczanowski's *A. calcaratus* and *A. brevirostris* it is somewhat startling to affirm that they ought to be put together. For the present, at any rate, I keep them distinct.

In *A. furcatus*, then, the outer rectrix is pure white, with a broad black patch on the inner web, beginning at the base, and extending up to within one third of the length of the feather from the tip. Towards the tip there is likewise more or less indication of a narrow black patch on the outer web. In the second rectrix (see fig. 2 *a*) there is a very clear and distinct broad white line along the inner side of the shaft, the remaining (outer portion) of the inner web being quite black. This is obviously a mere augmentation of the corresponding colours in *A. correndera*; but the colours are much more definite.

Fig. 2.



a. Second left outer rectrix of *A. furcatus* (lower surface).
b. Foot of ditto.

D'Orbigny gives Patagonia and High Bolivia as the patria of his *Anthus furcatus*. If my views as to his species are correct, it also occurs near Buenos Ayres and in Central Peru, having nearly the same range as *A. correndera*. The question is, Is it really separable from that species?

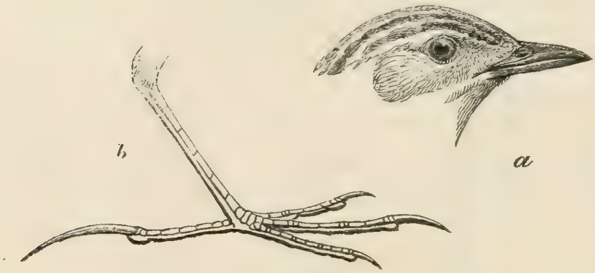
In three examples of *A. furcatus* before me the two middle rectrices are slightly shorter than the others, and the tail may be said to be slightly forked. But I also observe this feature in some specimens of *A. correndera*.

6. **Anthus nattereri**, sp. nov. (Pl. X.)

Anthus correndera, Pelz. Orn. Bras. p. 69 (Natt. no. 441).

The bird which Hr. v. Pelzeln has placed, in his excellent memoir on Natterer's collection, under the name *A. correndera* seems to me to be quite distinct from that species; and I propose to rename it after its discoverer. I have one skin in my own collection, received in exchange from Vienna; and Hr. v. Pelzeln has kindly lent me a second.

Fig. 3.



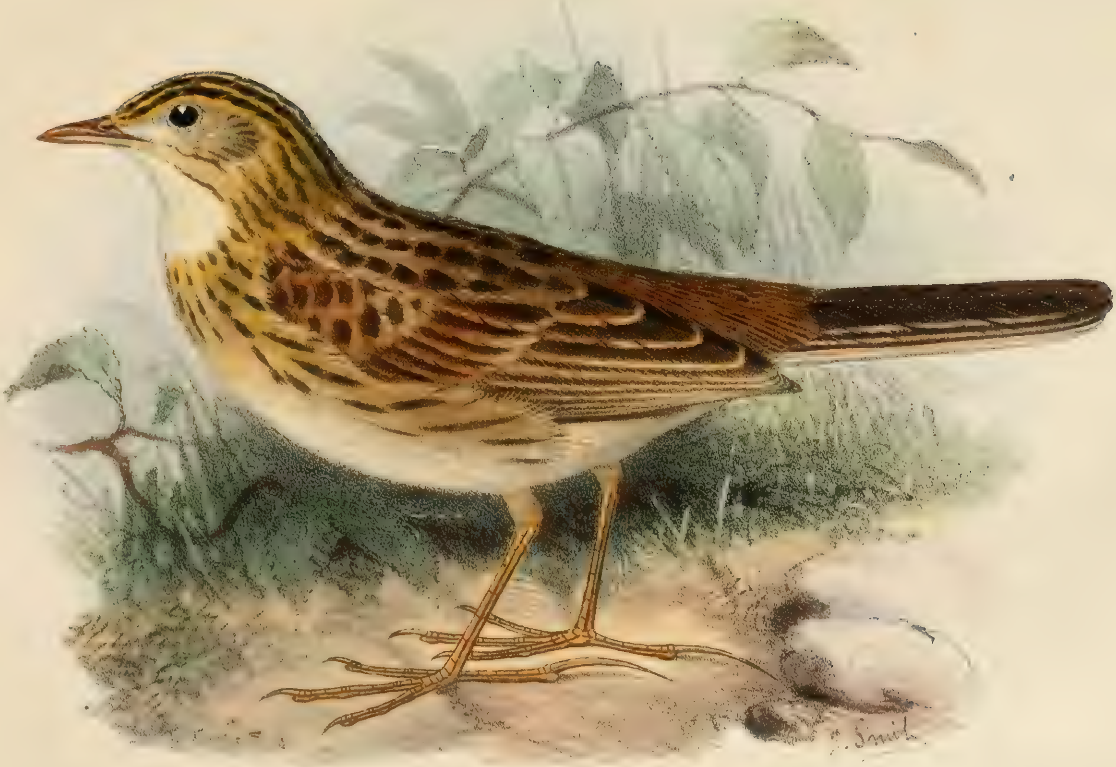
a. Head of *Anthus nattereri.*
b. Foot of ditto.

N.B. In the plate (Pl. X.) the bill is made rather too large.

The short thick bill (fig. 3 *a*) seems to render this bird distinct from any other American species known to me. The plumage is altogether more tawny or rufous; there is a pretty distinct eye-stripe; the striæ on the breast are few and lineiform; and the legs are rather stout. The hind claw is unfortunately imperfect in one specimen; in the other it is long and slender (see fig. 3 *b*).

The wings are shorter than in *A. correndera.* The first four primaries are equal, or nearly so, in length; and the fifth is about ·125 inch shorter, the sixth more than as much shorter again. But too much stress should never be placed upon wing-formulæ, as the proportions will always be found to vary when a series is examined.

The tail is rounded at the end, and the feathers are very pointed. The outer rectrix is pale smoky, with a slight black elongated patch towards the base on the inner



J. Smit lith.

Hanhart imp

ANTHUS NATTERERI

AMERICAN MUSEUM
CENTRAL PARK,
NEW YORK.
OF NATURAL HISTORY.

web. This black patch is much increased in the second rectrix, occupying more than half the web, and leaving only a smoky white line along the shaft, which increases in breadth towards the tip. There is a slight white tip to the third outer pair, the rest of which, along with the six others, is black, the two middle rectrices being margined with rufous, like the back.

The following are the principal measurements of the two specimens :—

	Long. tota.	Alæ.	Caudæ.	Tarsi.	Ung. post.
	in.	in.	in.	in.	in.
Mus. P. L. S.	5·4	2·9	2·5	0·9	0·7
Mus. Vindob	5·0	2·8	2·2	0·2	..

In the latter specimen the tail-feathers are not quite fully developed, I think.

Natterer obtained his specimens of this *Anthus* during his third journey, in the south of the province of Sao Paulo in July and August 1820, at Pescaria, Rio Verde, and Ytarare. He remarks that it frequents the grassy plains, and likes to run on the roads.

According to our present state of information, therefore, I am inclined to discriminate six species of Neotropical Pipits (not counting *Anthus ludovicianus*, which only occurs in Guatemala), somewhat as follows :—

- *a.* Bill slender ; tail-feathers rounded.
    - *a′.* External rectrices smoky ; under surface of body tawny.
        - larger, wing 3·2 .... 1. *A. bogotensis.*
        - smaller, wing 2·8...................... 2. *A. chii.*
    - *b′.* External rectrices white ; under surface of body white or yellowish.
        - *a″.* Very small, wing 2·5 .... 3. *A. rufus.*
        - *b″.* Larger, wing 3·0 to 3·2.
            - hind claw long and straight .... 4. *A. correndera.*
            - hind claw short and curved .... 5. *A. furcatus.*
- *b.* Bill stout ; tail-feathers pointed .... 6. *A. nattereri.*

These characters may seem somewhat undecided perhaps, but not more undecided, I think, than the species themselves to which I have applied them.

XXVI.—*A few additional Notes on Birds of Egypt.*

By E. Cavendish Taylor, M.A., F.Z.S.*

I left Naples for my fourth visit to Egypt on March 9th, 1878, and arrived at Alexandria on the morning of the 14th. Our steamer was accompanied nearly the whole of the voyage by considerable numbers of *Larus leucophæus* and *Larus melanocephalus,* the latter already at that date in full breeding-plumage, with black head well developed. These were the only Gulls I saw until we came in sight of Alexandria, when the peculiar Egyptian race of *Larus fuscus,* with the very dark mantle, appeared in great numbers. On March 17th I went on to Cairo, which was my head quarters until April 16th. On March 21st I visited the Pyramids of Gizeh, where I found, as usual, those regular *habitués* of the locality, *Falco lanarius, Bubo ascalaphus,* and *Corvus umbrinus.* I also saw numbers of a bird I should not have expected to find in such a place—*Sylvia rueppelli.* On March 27th I went to Halouan, where there is an excellent hotel in the middle of the desert, fifteen miles due south of Cairo. The *raison d'être* of Halouan and its hotel is a copious spring of sulphureous water, celebrated for its efficacy in cutaneous and other diseases. I did not find Halouan a very good place for collecting; but it is the best head quarters from which to visit Sakara and the Pyramids of Dashoor. I remained three days at Halouan, and then returned to Cairo. On April 6th I went to Port Said, passing a night at Ismailia on the way. I found Port Said a very good place for Terns and Gulls, but I did not get much else. Port Said has the great merit of possessing a first-rate hotel. I stayed there three days, and then returned to Cairo, where I remained until April 16th, when I went to Damietta, where I made the acquaintance of Mr. Eugene Fillipponi, a resident in that town, of whom I had heard from Mr. J. H. Gurney, jun., and from whom I got some rather nice birds. At Damietta I came in for spring visitants, and found *Oriolus galbula, Cuculus canorus,* and *Yunx torquilla* far more numerous than I had ever before seen them in Egypt. I went from Damietta to Alexandria on April 20th, whence, three days later, I left Egypt for Marseilles direct by French steamer. On our voyage many landbirds, evidently on their migration northwards, settled on the rigging of our ship to rest. Among them I remember especially several Turtle Doves (*Turtur vulgaris*) and Yellow Wagtails (*Motacilla flava*), and one Kestrel (*Falco tinnunculus*). This last was caught asleep on its perch in the rigging by one of the crew shortly after sunset. In the following notes I do not give a list of the birds seen or shot by me. I only mention those about which I have something to say in addition to, or differing from, what has already been said by myself or other writers on Egyptian ornithology.

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* See for previous Notes Ibis, 1859, p. 41, and 1867, p. 48.

AQUILA CLANGA (Pallas). Greater Spotted Eagle.

A very large female of this species was shot by an Arab on 18th April near Damietta, while I was staying there. It was skinned by Mr. Fillipponi, purchased from him by me, and is now in my collection. It is decidedly the largest individual of the species I have ever seen, as it measures 31 inches in length. The date on which it was shot (April 18th) is unusually late, and would lead one to suspect that this species does sometimes stay to breed in that country.

BUTEO DESERTORUM (Daudin). Desert-Buzzard.

A friend of mine shot an unusually large individual of this species, while Quail-shooting near the Pyramids of Gizeh, a few days before my arrival at Cairo. It is now in my possession, and is the first and only specimen of the species from Egypt that I have ever seen.

BUTEO VULGARIS (Leach). Common Buzzard.

On the 18th of April I shot, near Damietta, the very smallest Buzzard I ever saw. It is not more that two thirds of the usual size, and is very dark in colour. On dissection I was unable to find any trace of sexual organs. Crop crammed with lizards and small snakes.

FALCO LANARIUS, Linn. Lanner Falcon.

This is a great frequenter of pyramids; and I seldom visit those of Gizeh without obtaining either birds or eggs. On March 24, 1870, I took a nest containing five eggs of this species on the third Pyramid of Gizeh. I saw the parent bird fly off the nest, but did not get a shot at it. The eggs were much incubated, and pale in colour. I searched for the nest on the occasion of my last visit to the pyramids of Gizeh, on the 21st of March last, but did not find it. I saw, however, a pair of Lanners soaring round the summit of the third Pyramid; and the male bird was brought to me at Cairo a few days after by an Arab. A pair of Lanners also frequent, and, doubtless; annually breed on, the northern pyramid of Dashoor. I have noticed that in this species the sexes differ less in size than in any other species of Falcon with which I am acquainted.

BUBO ASCALAPHUS (Sav.). Egyptian Eagle-Owl.

This fine Owl also frequents, and annually breeds on, the Pyramids of Gizeh. On March 24, 1870, I shot a male; and on March 21 of the present year I got a nest containing two eggs, together with the female bird, on the third Pyramid. This Owl lays only two eggs.

CENTROPUS ÆGYPTIUS (Gm.). Egyptian Coucal.

I have never met with this bird since my first visit to Egypt in 1854, when I shot a specimen in the Delta. I have lately been told, on perfectly trustworthy authority, that it is especially common about Rosetta, a locality little visited by Egyptian travellers.

CUCULUS CANORUS, Linn. Common Cuckoo.

Very abundant near Damietta on April 18.

YUNX TORQUILLA, Linn. Wryneck.

In great numbers all about Damietta on April 18.

LANIUS LAHTORA, Sykes. Pallid Shrike.

Very local, but abundant in certain localities. I saw a great number of these Shrikes close to the railway-line between the stations of Chibin el Kanater and Belbeis, on the direct Cairo and Zagazig line, on my journey both to and from Ismailia at the beginning of last April. They were perched on the low bushes on the railway embankment, and were so tame that they barely moved as the train passed. I saw them nowhere else except between the above-named stations.

This is not a common species in Egyptian collections.

MUSCICAPA ATRICAPILLA, Linn. Pied Flycatcher.

MUSCICAPA COLLARIS, Bechst. Collared Flycatcher.

Both these species tolerably common all about Cairo from March 20 to April 15.

SAXICOLA ALBICOLLIS (Vieillot). Eared Chat.

I shot and skinned at Halouan, on March 29, an individual of this species that ought to have been a female; for it was in exactly the plumage figured and described by Mr. Dresser as the adult female of this Chat. Great was my surprise when, on dissection, it proved to be a male. Have the sexual distinctions of the Chats been thoroughly elucidated?

SYLVIA RUEPPELLI, Temm. Rüppell's Warbler.

Nothing surprises me so much as the fact that Mr. Gurney did not meet with this species. I found it extremely common all about Cairo all the time I was there, *i. e.* from March 20 to April 15. At the Pyramids it was abundant, creeping about among the heaps of huge stones, and when disturbed taking refuge in the crevices, just like a Chat (*Saxicola*) would do. Indeed the desert around the Pyramids would seem altogether more suited for Chats than for Warblers; and I was surprised to see this species so plentiful there. I also found it in considerable numbers between Abbassieh and Heliopolis, creeping about among low bushes and hedges. I shot several both at the Pyramids and also here.

PASSER SALICICOLA (Vieillot). Spanish Sparrow.

Captain Shelley says ('Birds of Egypt,' page 149) that he never met with this species later than the beginning of February; and Mr. Gurney seems to have found it rather rare. On the contrary, I found it in great numbers all about Cairo up to the date of my departure from that place on the 16th of April, which leads me to the conclusion that it remains to breed in Egypt. I quite admit that *Passer domesticus* is the Sparrow of the towns; but I still maintain my previously expressed opinion that this species is fully as abundant as that one in the open country. The heaps of dead Sparrows exposed for sale in the Cairo bird-market, which I visited almost daily, contained generally a greater number of this species than of *Passer domesticus.* Early in April, at Heliopolis, I saw a lot of Sparrows congregated on a low sont tree. I took a family shot, and brought down eight of them. Two were females. Of the remaining six, five were males of this species in full breeding-plumage, and the other was *Passer domesticus*—which shows that the two species occasionally congregate together, a fact of which I was not previously aware.

Corvus umbrinus, Hedenborg. Brown-necked Raven.

This bird breeds regularly at the Pyramids of Gizeh in a certain hole in the second Pyramid. I visited the hole on the 21st of March last. The nest and birds were there; but the eggs were not yet laid. This species differs from the common Raven, *Corvus corax,* not only in size and colour, but also in having the wing-primaries longer and much more pointed. The legs are also, I think, longer and stronger in proportion to the size of the bird.

Turtur isabellinus, Bonaparte.

I first saw this Dove on March 29, at Halouan, where I shot the only one I saw there. I afterwards found it pretty common between Abbassieh and Heliopolis. This is considerably further north than Mr. Gurney found it.

Ibis æthiopica (Lath.). Sacred Ibis.

I saw a fine adult specimen of this bird (the *Ibis religiosa* of authors) in the collection of M. Eugene Fillipponi at Damietta, who told me that it had been shot by an Arab near Lake Menzaleh last November. The Arab said that he saw a pair, but only succeeded in shooting one of them. M. Fillipponi entertained what I thought rather an exaggerated idea of the value of this specimen; so I did not purchase it, and he has it still for sale. I believe that this species has not previously been obtained or seen in Egypt by any recent traveller.

Strepsilas interpres (Linn.). Turnstone.

M. Fillipponi had three or four specimens, all obtained near Damietta, of which I now possess one. This bird is new to the Egyptian list.

Larus fuscus, Linn. Lesser Black-back Gull.

This is decidedly the most abundant of all the large Gulls in Egypt. I found it especially common at Port Said, where I shot several of them. Specimens from Egypt have the mantle peculiarly dark in colour—much darker than those from other parts of the Mediterranean, or from the British coasts.

Larus leucophæus, Licht. Yellow-legged Herring-Gull.

This is the commonest of the large Gulls all round the coasts of Italy and Sicily, in the Bosphorus, and generally all over the eastern portion of the Mediterranean. In Egypt, however, it is much less numerous than *Larus fuscus.*

Larus ichthyaetus, Pall. Great Black-headed Gull.

It strikes me that this splendid Gull has become more abundant of late years in Egypt. I saw several flying about at Port Said and Damietta; and M. Fillipponi had no less than four fine specimens, of which I took one.

Larus gelastes, Licht. Slender-billed Gull.

I shot an immature individual of this species at Port Said on the 9th of April last. Great was my surprise to find that the legs, feet, and bill were pale dull yellow; iris silvery white, as in the adult; sex, male. As far as I know, it has never before been noted that in the immature state of this species the legs and bill are yellow.

Larus ridibundus, Linn. Black-headed Gull.

Abundant at Port Said. None of those that I shot there on April 9th had yet assumed the dark head. This species is found on the Nile, a long way up the river.

Larus melanocephalus, Natt. Mediterranean Black-headed Gull.

This Gull is not so much given to ascending rivers as the preceding species. In Egypt I have never seen it except at Alexandria, where it is not very common. At Naples, where it abounds, it had already assumed the black head by the end of the first week of March.

Sterna caspia, Pall. Caspian Tern.

Common at Port Said and at Damietta.

Sterna cantiaca, Gm. Sandwich Tern.

I saw several in Alexandria Harbour on March 15th.

Sterna anglica, Montagu. Gull-billed Tern.

I saw a considerable number of these Terns hovering over some flooded rice-fields near Damietta on April 17th.

Puffinus kuhli (Boie). Cinereous Shearwater.

A specimen of this Shearwater was in the shop of Mr. Mayer, a bird-stuffer at Alexandria, who told me that he had shot it close to that town early in the month of April last.

Puffinus yelcouan (Acerbi).

Mr. Mayer had also a specimen of this bird, shot at Alexandria. Many writers consider this species identical with *Puffinus anglorum*. I think it may readily be distinguished by the paler and browner tint of the upper part of the body, and by the colour of the under tail-coverts, which are greyish brown instead of white.

Fuligula rufina (Pall.). Red-crested Duck.

Mr. Fillipponi had a fine male specimen of this Duck, shot at Damietta, which I have brought to this country. This species is new to the Egyptian list.

XXVII.—*Notices of recent Ornithological Publications.*

(Continued from p. 198.)

35. *Streets on the Natural History of the Hawaiian and Fanning Islands and Lower California.*

[Contributions to the Natural History of the Hawaiian and Fanning Islands and Lower California. By Thomas H. Streets, M.D. Bull. U.S. Nat. Mus. No. 7.]

The collections which form the subject of this paper were made during a surveying cruise in the North Pacific by the U.S. S. 'Portsmouth.' The most interesting portion of the part relating to the Birds is that which treats of birds of the Fanning Islands, a small group situated to the southward of the Sandwich Islands, and of which, ornithologically speaking, little was previously known. It was here Dr. Streets obtained *Coriphilus kuhli**, the locality of which was previously undetermined; and here, too, he obtained the Gadwall recently described as *Chaulelasmus couesi* †. A Petrel obtained on Christmas Island also appears to be new, and is here called *Puffinus nativitatis*. The other species mentioned are mostly from Lower California and the Sandwich Islands, and, though of interest, do not call for any special comment on our part.

36. *Prjevalsky's Expedition to Lob-nor.*

[Reise des Russischen Generalstabs-Obersten N. B. Przewalsky von Kuldscha über den Thian-Schan an den Lob-Nor und Altyn-Tag, 1876 und 1877. Uebersetzung des an die k. russ. geographische Gesellschaft in St. Petersbourg gerichteten offiziellen Berichtes von Przewalsky, D. D. Kuldscha 18. August, 1877. Petermann's Mittheilungen, Ergänzungsheft No. 35.]

In this memoir will be found a preliminary account of the distinguished Russian traveller Prjevalsky's last expedition to the southern confines of the great Gobi desert in 1876–77. There are many zoological remarks. A list is given of the birds (48) found wintering on the Tarim, which runs into Lob-nor. Two new species, *Podoces tarimensis* and *Rhopophilus deserti*, are mentioned, but not described. An account is also given of the birds of the lake itself, and of those of the Altyn-tag Mountains which border it on the south.

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* *Cf.* Sclater, P. Z. S. 1876, p. 421.

† *Cf.* 'Ibis,' 1877, p. 242.

37. *Finsch on New Finches.*

[Ueber eine anscheinend neue Webervogelart. Von Dr. O. Finsch in Bremen. Der geldwangige rothschnäblige Webervogel (*Ploceus russi*, Finsch). Die gefiederte Welt, No. 31 (1877).]

[Ueber eine anscheinend neue Prachtfinkart. Von Dr. Otto Finsch in Bremen. Wiener's Astrild (*Pytelia wieneri*, Russ). Die gefiederte Welt, No. 32 (1877).]

Dr. Finsch describes these two apparently new Finches from specimens originally brought alive to Europe. The type of the *Ploceus russi*, from West Africa, is still living in Dr. Dr. Carl Russ's aviary. Of the *Pytelia*, which is allied to *P. melba*, four living specimens, said to be from Australia, were purchased by Hr. Wiener; but one is since dead, and has been submitted to Dr. Finsch's examination.

38. *Oustalet on New Birds from Saigon and New Guinea.*

[Description de quelques espèces nouvelles de la Cochinchine et de la Nouvelle-Guinée, par M. E. Oustalet. Extrait du Bull. Soc. Philomat. de Paris, Dec. 1877.]

The species described as new are *Chætura cochinchinensis* and *Ixus germaini*, from the vicinity of Saigon, and *Pachycephala squalida*, from Amberbaki, New Guinea (*Laglaize*). M. Oustalet adds remarks on other *Pachycephalæ* and *Rectes* from M. Laglaize's collection, and establishes the fact that *Hypothymis menadensis* of Quoy and Gaimard is from New Guinea (not Celebes)*, and is a *Monarcha*, perhaps = *M. dichroa*, Wallace.

39. *Oustalet on New Birds in the Museum of Natural History, Paris.*

[Description de quelques espèces nouvelles de la collection ornithologique du Muséum d'histoire naturelle, par M. E. Oustalet. Extrait du Bull. Soc. Philomat. de Paris, 7^{e} sér. t. i. no. 3, 1877.]

In this paper M. Oustalet describes *Loxioides bailleui*, a singular new type allied to *Psiltirostra,* from the Sandwich Islands (the exact island is not stated). An account is given of a small collection from the Seychelles, in which are specimens of a new species from Marianna Island, proposed to be called *Ellisia seychellensis.* M. Oustalet finally gives remarks on a Pratincole obtained by M. Marche in Western Africa, which he was at first inclined to consider as new, but subsequently to identify with *Glareola nuchalis,* Gray. He adds a list of species recently obtained by M. Marche in Gaboon.

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* *Cf.* Walden, Trans. Zool. Soc. viii. p. 66.

40. *Brüggemann on the Ornithology of Central Borneo.*

[Weitere Mittheilungen über die Ornithologie von Central-Borneo. Von D. F. Brüggemann. Abth. nat. Ver. z. Bremen, vol. v. p. 525.]

In this memoir the late Dr. Brüggemann gives an account of the additional collections* recently transmitted by Dr. G. Fischer to the Grand-Ducal Museum in Darmstadt from Moora Teweh in Central Borneo. Moora Teweh lies nearly in the centre of the island, under the equator, in long. 115° E. The collection contained 859 specimens, referable to 152 species. No new species are described; but there are many important notes.

41. *Fischer on doubtful Celebean Birds.*

[Bemerkungen über zweifelhafte celebensische Vögel. Von Dr. G. Fischer. Abh. nat. Ver. z. Bremen, vol. v. p. 538.]

Dr. Fischer here gives information in correction of the localities attributed to certain species of birds mentioned in Dr. Brüggemann's "Beitrage z. Orn. v. Celebes u. Sangir" (Abh. nat. Ver. z. Bremen, v. p. 35).

42. *Sharpe's Contributions to the Ornithology of New Guinea.*

[Contributions to the Ornithology of New Guinea. By R. Bowdler Sharpe, F.L.S., F.Z.S., &c. Part ii. On the Ornithological Collections formed by the late Dr. James in South-eastern New Guinea and Yule Island. Journ. Linn. Soc. (Zoology) vol. xiii. pp. 305–321.]

The collection spoken of was made on Yule Island and on the opposite main coast, where Dr. James was attacked and killed by natives in 1876. Fifty-four species are enumerated. The new species described are *Tanysiptera microrhyncha,* allied to *T. galatea,* and *Melidora collaris,* allied to *M. macrorhina.* A most unexpected occurrence is that of the singular bird of prey *Machærorhamphus alcinus,* of which a single specimen was procured by Dr. James at Nicura, on the mainland of New Guinea.

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* *Cf. anteà,* p. 108.

43. *Lawrence on a New Parrot.*

[Description of a New Species of Parrot of the Genus *Chrysotis.* By George N. Lawrence. Ann. N.Y. Acad. of Sci. vol. i. No. 4.]

This species is named *C. lactifrons,* and is based on a specimen formerly living in the Central-Park Menagerie, New York, and said to have been brought from Bahia. It belongs to the group of *C. sallæi, C. collaria,* and its allies, and is probably a native of one of the West-India Islands.

44. *Camerano on the Anatomy of* Nasiterna pusio.

[Intorno all' anatomia della *Nasiterna pusio,* Scl. Note di Lorenzo Camerano. Atti d. Reale Accad. d. sci. Torino, vol. xiii. Gennaio 1878.]

Contains an account of the anatomy of this singular little Parrot, based on a specimen obtained from Mr. Krefft, of Sydney, during the voyage of the 'Magenta.' Both carotids are present; there are no cæca, nor any furcula. (*Cf.* Sclater, P. Z. S. 1865, p. 620.)

45. *Pelzeln's Report on the Progress of Ornithology in* 1876.

[Bericht über die Leistungen in der Naturgeschichte der Vögel während des Jahres 1876. Von August von Pelzeln. (Wiegm. Arch. xliii.)

No words are necessary to commend to the readers of 'The Ibis' Hr. v. Pelzeln's Report on the progress of our special branch of science during the year 1876, which should be in the hands of every ornithologist.

XXVIII.—*Letters, Announcements, &c.*

We have received the following letters, addressed to the Editors of 'The Ibis:'—

Australian Museum, Sydney,
October 25, 1877.

Gentlemen,—Permit me to remark, for the benefit of your readers, that, among the specimens of *Eclectus polychlorus* which I selected for this Museum from a large series made by the Rev. George Brown in New Ireland are several which I think will at least throw some light on the question respecting the sexes of the "*red*" and "*green*" birds. *First,* then, I have before me a young *red*-and-*blue* bird, evidently not long from the nest. There is no trace of green feathers on this specimen, except on the *outer margins* of some of the wing-quills, where this colour is common to both the "red" and the "green" birds. The sex of this specimen was not determined. *Secondly,* there is in the series an apparently quite adult bird in the *red-and-violet* plumage (*E. linnæi*), in which the *bill is becoming yellow,* and there is also a *patch of crimson* among the *blue under wing-coverts*; the axillaries are tinged and margined with *green*; and there are several feathers tipped with red on the sides; some of the *flank-feathers* are margined with *green,* as are three or four of the adjacent *upper tail-coverts*; and the *sixth secondary quill* on the outer web near the base has a spot of green; and several of the scapularies are tinged with the same colour at their bases.

From these facts it would appear that the young, perhaps of both sexes, are red-and-blue from the nest, and that they retain this state of plumage for a considerable time, after which the *males* assume the green plumage, with red sides and under wing-coverts.

Yours &c.,
E. P. Ramsay.

[Mr. Brown writes (24th Feb. 1878) to Mr. Sclater:—

"I have satisfied myself that I had been led to make a very inaccurate assertion in one of my letters to you as regards *Eclectus polychlorus* and *E. linnæi.* They are undoubtedly the male and female of the one species; and I am very sorry that I stated so positively (*cf.* P. Z. S. 1877, p. 107) that they were not. I must, however, plead in extenuation that, when my attention was drawn to the question, I requested the young man (Cockerell) whom I employed as collector to examine each bird carefully; and he assured me most positively that he had done so, and had marked specimens of each as male and female. As I now, however, skin all the birds myself, I think you may depend on both sex and locality being in every specimen properly marked."]

9th May, 1878.

Sirs,—In May 1877 I wrote to you (*vide* 'Ibis,' 1877, p. 397) respecting an immature Falcon captured off Socotra, and living in the Menagerie of the Zoological Society, which had been supposed to be an example of *Falco peregrinator* (*vide* 'Ibis,' 1877, p. 149).

I again inspected this specimen about a week since, and found that its assumption of adult plumage is now so far advanced, especially on the breast, as to leave no doubt of the bird being a male of *Falco peregrinus,* and not referable to any of the nearly-allied species from which it was difficult to distinguish it in immature plumage.

I am yours &c.,
J. H. Gurney.

London, 30th May, 1878.

Sirs,—Through the kindness of Mr. Salvin I have had an opportunity of examining the type of *Bradypterus platyurus* of Swainson, which is now in the Museum of the University of Cambridge. Dresser, in his 'Birds of Europe' (March 1876), in his article on Cetti's Warbler, expresses the opinion, after "critically examining and comparing Swainson's type of *Bradypterus platyurus,*" that "there is not a shadow of doubt that it is nothing but Cetti's Warbler." As this specimen was the bird on which Swainson founded the genus *Bradypterus,* the correctness of its identification becomes a matter of some importance. Ornithological *statute law* provides that where the description of a genus or species is not sufficient for its identification, the name of such genus or species should be ignored in favour of the earliest name which is accompanied by a sufficient description. The practice of ornithologists has, however, established a rider to this statute, which we may call ornithological *judges' law*. According to this uncodified law a name may stand upon the type specimen, if such exists; and the type specimen is allowed to eke out any deficiency, and to correct any slight error in the description, and even, in certain very exceptional cases, to condone its absence.

I find that Swainson's bird has too long a bill for Cetti's Warbler. The culmen measures ·6, whereas the culmen of Cetti's Warbler varies from ·45 to ·55. It is also much more buffy or more rufous on the flanks and under tail-coverts than is usual in the European bird. The under tail-coverts are of a uniform coffee-brown, whereas those of Cetti's Warbler are tipped with white. Finally, "there cannot be a shadow of doubt" that the specimen in question is *not* Cetti's Warbler, because it has unmistakably *twelve* tail-feathers, the European bird possessing only *ten*.

After "critically examining and comparing Swainson's type of *Bradypterus platyurus*" with Levaillant's plate of "Le Pavaneur" in his Hist. Nat. des Ois. d'Afr. iii. p. 94, plate 122, I see no reason why Swainson's identification should not be correct. I have skins in my collection from the Transvaal almost exact duplicates of Swainson's type. The genus *Bradypterus*, as applied to Cetti's Warbler, therefore falls to the ground, and must be retained for the African bird. We cannot, however, retain Swainson's specific name, which dates from 1837 (Swains. Class. of Birds, ii. p. 241), inasmuch as Vieillot in 1817 (Nouv. Dict. d'Hist. Nat. xi. p. 206) had already founded his *Sylvia brachyptera* upon "Le Pavaneur" of Levaillant. The African bird, therefore (which is, by the way, better known to ornithologists by a name of still more recent date, *Bradypterus sylvaticus*, Sund.), must rejoice in the uneuphonious title *Bradypterus brachypterus* (Vieill.).

Cetti's Warbler was first figured in the Planches Enluminées (no. 655, fig. 2), as *la bonscarle de Provence.* Upon this figure Gmelin founded his *Motacilla sylvia*, var. γ. *Curruca fulvescens*, in 1788. Ornithological *judges' law* does not, however, recognize the varieties of Gmelin; and we pass on to 1820, where we find our bird reappearing as *Sylvia cetti* of La Marmora. In 1829 the genus *Potamodus* was established by Kaup; and Cetti's Warbler has sometimes appeared as *Potamodus cetti* (Marm.). This latter genus, however, was founded upon *Sylvia fluviatilis*, by which Kaup doubtless meant an *Acrocephalus* or a *Locustella.* Bonaparte was the first to establish a separate genus expressly for *Sylvia cetti*; and he having raised the specific name into a generic one, we are again driven elsewhere to find the second oldest name. This appears to be *Sylvia sericea* (Natt.) apud Temm. (Man. d'Orn. i. p. 197); so that our bird appears in Bonaparte's 'Birds of Europe and North America' (p. 12) as *Cettia sericea* (Natt.)—a name to which it appears to be entitled with the alteration in the authority to "(Temm.)," no publication of the name by Natterer himself having taken place.

Yours &c.
HENRY SEEBOHM.

Brankston Grange, Culross, N.B.,
19th May, 1878.

SIRS,—I beg to send you the following notice of three recent occurrences of the Stockdove (*Columba œnas*) in Scotland, one in Stirlingshire, and the other two in this neighbourhood (Southern Perthshire), which may be interesting to the readers of 'The Ibis,' as only two instances of its occurrence north of the Tweed have hitherto been recorded, one of which is extremely doubtful (for both, *vide* Gray's 'Birds of the West of Scotland,' p. 219).

The first of these specimens I have now to record was shot on 20th March last, as it flew from a tree close to Alva House, Stirlingshire. It was sent for preservation by the gamekeeper who shot it; but the sex was not ascertained.

The second bird, a female, was shot on 25th March, on the estate of Tulliallan, adjoining this one (Westgrange), by a gamekeeper. It has been placed in the Museum of the Alloa Society of Natural Science.

The remaining specimen, a male, was shot on this estate on 2nd April by my keeper. In both the the latter cases the birds were shot when feeding on newly-sown grain-fields in company with Wood-pigeons. From the close vicinity of the places where the two last-mentioned birds were shot (only about a mile distant from each other), they may have possibly been a mated pair.

Yours &c.,
John J. Dalgleish.

Sirs,—In a note on the genus *Artamus*, recently published in Rowley's 'Ornithological Miscellany' (part xiv. p. 179) I observe that Mr. Sharpe has rejected the Linnean specific title *leucorhynchus* (founded on Brisson's *Pie-grièche de Manille*), as well as Scopoli's title of *philippinus*, and Gmelin's *dominicanus* (founded on Sonnerat's *Pie-grièche dominiquaine des Philippines*), for the Philippine Swallow-Shrike, and adopted Valenciennes's more recent title, *leucogaster*, bestowed on a bird from Timor, although he tells us (p. 179) that he considers the titles *leucorhynchus* and *leucogaster* to be synonymous. Thus a title which has been current with all writers for over a hundred years is upset. Mr. Sharpe remarks "so long as there is a doubt about the Brissonian bird from the Philippines, I think the name ought to be discarded, though Lord Tweeddale says that 'he has no doubt that from it Brisson and Sonnerat took their descriptions.' Here I can only say 'not proven!'" In my humble opinion it is "proven" by overwhelming evidence that Brisson did describe the Philippine species. Let us sift the evidence—first as to the *patria* of the type, secondly as to whether the description is sufficient to show the identity of the type.

Brisson (undoubtedly a most accurate author) distinctly states that the species to which his type belonged "is found in the neighbourhood of Manilla, capital of the island of Luzon, whence it was sent to M. l'Abbé Aubry, who has preserved it in his cabinet." "The inhabitants of Manilla call it Langni-Langnaien." Brisson called it *Lanius manillensis.*

Now as to his description of the specimen, which we know he had before him; for two asterisks precede the title. He says that "the head, throat, neck, scapulars, wing-feathers, and those of the tail are blackish" ("noirâtres" in the French, "*nigricantes*" in the Latin), that is, blackish or swarthy, but not jet-black, nor even black. Mr. Sharpe says that the title "*leucorhynchus*" cannot be retained for the Philippine bird, as its colours are stated to be "black and white." They are so stated to be by Sonnerat describing other species, not so, as I have shown, by Brisson. Mr. Sharpe goes on to say that the question is somewhat complicated by the fact that there are certain black-and-white *Artami,* such as *A. melaleucus* and *A. maximus,* but is of opinion that "it is highly improbable that either of these species formed the subject of Brisson or Sonnerat's descriptions." It is not necessary to prove to what species Sonnerat's type belonged; but it is clear that neither of the species above named could have been before Brisson; for the first is from New Caledonia, and the other from New Guinea, and Brisson describes the colour as being *blackish,* not black. The colouring of many examples of the Philippine species (and there is only one species known to inhabit the Philippines) is blackish. "Noirâtre" or *nigricans* are terms which fairly convey the general tone of the dark colour of the phase of plumage exhibited by the Philippine bird; for, as I have shown elsewhere (P. Z. S. 1877, p. 544), Philippine individuals occur wearing a dark smoky-brown plumage. We have thus the fact that Brisson circumstantially stated the origin of his type specimen, and that the description of it given by him is strictly applicable to at least one of the styles of colouring which the Philippine bird, as known to us, very frequently assumes. It may also be added that *A. leucorhynchus* is one of the commonest and most widely-spread birds in the Philippines. Mr. Everett writes that you see it everywhere. And although it is unnecessary to resort to probabilities, these are enormously on the side of Brisson's specimens having come from Manilla.

Mr. Sharpe makes no endeavour to show what Brisson's bird may have been. About the genus there is no doubt, and yet it is the only species of the genus described by Brisson. There were only two species possible for him to have described. One, *A. fuscus,* is out of the question; the other is this Philippine species, with its wide range over the whole Malayan archipelago, Celebes, the Moluccas, parts of New Guinea with several of its islands, and parts of Australia. If a "black and white" species like *A. melaleucus* existed in the Philippines, as Drs. Hartlaub and Finsch at one time thought (P. Z. S. 1868, pp. 116, 117), it could not be Brisson's bird; for he described his species as being blackish. But Mr. Sharpe also admits that the archipelago is inhabited by only one species.

It is not my object to revise critically this monograph of the *Artami.* But when Mr. Sharpe says, "what the bird from the Pelew Islands is, cannot be determined without a specimen," and when we find this bird altogether omitted from his list of species composing the genus, it seems desirable to note that it has been described by Dr. Finsch (Journ. Mus. Geoffr. Hft. xiii. p. 41) as a distinct species, under the title of *A. pelewensis,* and that, quite lately, Dr. Finsch (P. Z. S. 1877, p. 739) has referred his readers to that account for the differences that distinguish it from *A. melaleucus.* It may be added to Mr. Sharpe's notes (*t. c.*) that the Celebesian form of *A. leucorhynchus* has been entitled *A. celebensis* by the late Dr. Brüggemann. A species from the "Inseln des stillen Oceans" has been described by the same author as new, under the title of *A. brevipes,* which, on Dr. Brüggemann's authority, I may state, is nothing but *A. fuscus.* It may be added that the same author, in the belief that *A. insignis* was the true *A. monachus,* has given the latter species the title of *A. spectabilis* (Ann. N. H. ser. 5, i. p. 349).

Yours obediently,

TWEEDDALE.

Yester, 24th May, 1878.

Captain Blakiston, writing from Hakodate, Japan, Dec. 30th, 1877, calls our attention to the following errors in Mr.

Swinhoe's last article upon his Birds from Hakodate ('Ibis,' 1876, p. 330):—

P. 331. *Hirundo americana*?, from Kamtchatka, line 13, read *vent* for "neck." As this specimen has the whole underparts bright chestnut with a dark breast-collar, am I not right in considering it the American bird?

P. 331. *Ceryle rudis.* A mistake. I sent Swinhoe a specimen of it. If you can find this, please see if it is not *H. coromanda.* It agrees with the 'Fauna-Japonica' figure of *H. coromanda major.*

P. 333. *Schœniclus pallasi* is also a mistake, I believe. As far as I can find out, we have only *S. pyrrhulinus,* Swinhoe.

P. 333. *Uragus sibiricus* also does not stand. Swinhoe, more recently ('Ibis,' 1877, p. 145), has made this bird out to be *Carpodacus roseus.*

P. 334. The note concerning *Tringa damacensis* was intended to refer to *Rhynchæa bengalensis.*

Rediscovery of Polyplectron emphanes.—The discovery by Mr. Everett (Lord Tweeddale's collector) of the true home of *Polyplectron emphanes**, in the Island of Palawan, which was announced at a recent meeting of the Zoological Society, is of much interest, as, though this fine bird has been known for the last fifty years, its true *patria* has remained a mystery. We may even hope to ascertain before long the locality of *Pavo nigripennis,* a bird found in many of our farmyards, but of which the original *sedes* is a problem yet unsolved.

Proposed B.O.U. List of British Birds.—At their recent annual general meeting, the members of the British Ornithologists' Union appointed a Committee to draw up a list of British birds, according to the most approved principles of modern nomenclature. The Committee have already held their first meeting, and have, we believe, decided on a plan of action. They will, however, be glad to receive suggestions from any member of the B. O. U., or other ornithologist, which may be addressed to the Secretary of the B. O. U. at 6 Tenterden Street.

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* Temminck, who was no classical scholar, writes this name "*emphanum.*" But the Greek being ἐμφανὴς, neuter ἐμφανὲς, the corresponding Latin term should be *emphanes,* unless it may be supposed to be the neuter of ἐμφαίνων, when "*emphænon*" would be orthographically correct.

Dresser's 'Birds of Europe.'—So many ornithologists are interested in this important work, that we are pleased to be able to give the following particulars concerning the prospects of its completion. Sixty-six parts have been issued up to the present time, and parts 67 and 68 are ready, all but the plates. It will take about six more parts to complete the work, and these will (barring accidents) be issued before the close of the year. Mr. Wolf has contributed several sketches, and Mr. Neale a few; and these, with what Mr. Keulemans has lately done, will, it is believed, keep the illustrations going. When the regular numbers are finished, there will still remain the introduction, general index, &c., together with a small supplement to correct errors and add additional information lately received. This, which it will take several months to prepare, it is purposed to issue in a thin volume, which will be so far useful that it will be available as an index, without having to take down every volume when hunting for a reference. In the meanwhile, the main portion of the work can be arranged and bound according to the instructions which will be issued with the last part.

The Dyke-Road Museum, Brighton.—No naturalist who goes to Brighton should omit to visit Mr. E. T. Booth's new museum in the Dyke Road. It contains a series of about 300 cases of British birds. Each species is placed in a separate case, and the specimens (male, female, young, and often nest and eggs) are arranged in what the owner considers to be their natural attitudes, with imitations of appropriate scenery in the background, often copied from the actual spot in which the specimens themselves were procured. The most wonderful feature in the collection is that the specimens have in every case been procured by Mr. Booth himself during 23 years which he has devoted to forming it.

It would be easy to criticise the mounting of the specimens, and their attitudes in some of the cases; but, taking the collection as a whole, we are sure that it will meet with general approval from ornithologists. Would that the authorities of our National Collection would take a hint from Mr. Booth, and, when they proceed to fit up their new public gallery at South Kensington, adopt a somewhat similar plan! A series of well-selected typical forms of bird-life displayed in this fashion would instruct and interest the public; whereas the present plan of exhibiting some thousands of badly-mounted (and, too often, unnamed) specimens crowded together in series of parallel rows only disgusts them.

We sincerely hope that but few, if any, of the present inhabitants of the Bird-gallery in Great Russell Street will find their way into the new galleries at South Kensington, but will be replaced by new and fresh specimens mounted in accordance with Mr. Booth's plan.

Death of Dr. Brüggemann.—We regret to have to announce the death of Dr. F. Brüggemann. Dr. Brüggemann was a native of Bremen, and studied at Jena, where he was for several years assistant to Prof. Haeckel. His earliest publications were on entomological subjects; but, later, he published an account of the Amphibians and Reptiles of Bremen. He was especially interested in ornithology, and, amongst other papers on this subject, published several on the Birds of Celebes and Borneo (see 'Ibis,' 1877, p. 126, and 1878, pp. 108 et 377). On the recommendation of Prof. Haeckel, Dr. Brüggemann was engaged last year by Dr. Günther to arrange and catalogue the collection of Corals in the British Museum. Whilst in the midst of this undertaking he died suddenly at his lodgings, on the night of Saturday, April 6th, of hæmorrhage from the lungs.

THE IBIS.

FOURTH SERIES.

No. VIII. OCTOBER 1878.

XXIX.—*Notes on the Birds of Central Patagonia.*

By Henry Durnford.

In 'The Ibis' for January 1877, p. 27, will be found some "Notes on Birds observed in the Chupat* Valley, Patagonia, and the Neighbourhood," which were the result of a month's observation and collecting. Since then I have made a more lengthened stay in the colony, my visit having extended from September 5th, 1877, to April 20th, 1878; and I am thus enabled to add considerably to the list of birds I then made out.

In the following communication I have thought it advisable to go through the whole list of birds again, though I have endeavoured to avoid any repetition of facts concerning those previously mentioned.

This time I had an exceptionally long passage from Buenos Ayres; and from the 5th August, on which day we weighed anchor in the river Plate, we were battling with winds and waves, and otherwise delayed by calms, till the 5th September, on which day we dropped our anchor in the river Chupat.

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* In the above-mentioned communication I have spelt the word Chuput. As Chupat is now generally used, I follow the custom. The more correct orthography would, however, be Chūba, which is the Indian pronunciation of the name of the river.

From the time I arrived at the colony till the 22nd October, I was engaged in collecting in the neighbourhood. of Chupat. On that date I started with two of the colonists on an expedition to Lake Colguape* and the river Sengel. This is not the place to give an account of our expedition; but to enable my readers rightly to understand the following notes, I will rapidly run over the route we adopted.

We followed the sea-coast as far as Montemayor height (cutting off the points), which we reached on the 31st October. On the following day we returned by compass W. by S., and the day afterwards W.S.W., arriving in the afternoon on the banks of a little river, which we called the Sengelen (the Welsh diminutive for Sengel), which flows from the lake to the river Chupat. Following this river up, on the 8th November we reached the lake; and this point I consider, from dead reckoning from my daily journal and from two observations I made with a box-sextant I carried with me, to be in about lat. 45° 50′ S., long. 68° 40′ W.; but I do not pretend to scientific accuracy. One of my companions places the lake in about the same position as I do; my other companion considers it further south. The difference between the point fixed by my observations with the sextant and my dead reckoning is only nine miles; and I therefore think I am not far out. We calculated this lake to be about twenty miles in length and fifteen in breadth; and after travelling along its southern and a portion of its western shores, we arrived, on the 10th November, at the river Sengel, which we found flowing into the lake. Continuing our journey up the river on the 11th, we came in sight of another large lake; but it being on the other side of the Sengel to the one we were on, we were unable to visit its shores. This lake, if not as large as the first-mentioned, has a greater body of water in it, and is apparently deeper: it is situated about six miles in a direct line from the first lake, from which it is divided by a high range of volcanic hills. After passing this lake, we followed the Sengel through many tortuous windings to a point I consider to be about lat. 45° 50′ S., long. 69° 50′ W.

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* The Tehuelche Indians call this lake "Col;" but as it is marked in many maps Colguape, though certainly placed in an entirely wrong position, I think it is better, in order to save confusion, to call it Colguape. "Col" is the name used by the southern Indians for a lake, whilst "Guape," is employed by the Moluches and northern Indians to designate the same thing.

On the 19th November we commenced our return journey, retracing our steps to the point at which we had touched the Sengelen, which we reached on the 26th. We then followed this river nearly to its junction with the Chupat, in about lat. 43° 46′ S., long. 69° 48′ W.; and travelling along the valley of the latter we reached the colony on the 4th December, 1877, after an absence of just six weeks.

On the 7th December I started on an expedition to Ninfas Point, where, however, I observed nothing of note.

After my return from there on the 12th, I was occupied till Christmas in collecting in the neighbourhood of the colony.

On the 26th December I made an excursion to Tombo Point, about sixty miles to the south of Chupat, where I had heard there was a large gullery, of which more anon, returning on New Year's day. Owing to some very brackish water I was compelled to drink whilst there, I was laid up for six weeks after my return, with, I believe, inflammation of the bowels, from which I was nearly recovered by the end of March.

There being no vessel leaving the colony till the 20th April, I was unwillingly detained till that date; and on the 30th we again anchored in the muddy waters of the La Plata.

My communication to 'The Ibis,' mentioned above (January 1877), contained notices of 62 species of birds observed in the Chupat valley and the neighbourhood. My present list extends this number to 89; and I do not think that many more will be found to occur in the district.

The only bird seen which I was unable to identify was a Snipe, specimens of which occurred at the Sengel where it enters the lake, and in the valley of that river, where I took its eggs. I believe it to have been the same species as is commonly found in Buenos Ayres, viz. *Gallinago paraguaiæ*; but I cannot be certain.

The nomenclature used is that employed by Messrs. Sclater and Salvin in their 'Nomenclator Avium Neotropicalium.' An asterisk before the name of a bird signifies that it was included in my former paper.

TURDUS MAGELLANICUS.

I shot one specimen of this Thrush on the 16th November, in the valley of the Sengel, the only one I saw. It was in company with *Myiotheretes rufiventris*.

Iris wood-brown; legs, feet, and beak pale orange-yellow.

*MIMUS PATAGONICUS.

Resident. Commonly observed throughout our journey. Young ones in the nest were found on the 12th November on the banks of the Sengel.

*TROGLODYTES FURVUS.

Resident. Common everywhere in the valleys. Always observed near water.

*ANTHUS CORRENDERA.

Resident. Common in the valleys and on the hills. In the winter they associate in small parties and frequent the lower lands.

*PROGNE PURPUREA.

Spring and summer visitor. Observed commonly throughout our journey wherever there were steep cliffs or rocks. I took eggs near Tombo Point on the 30th December. They had all left Chupat by the 1st March.

*HIRUNDO LEUCORRHOA.

Spring and summer visitor. Large congregations of these birds were assembled at Chupat on the 24th February; and on the following day all were gone. Common about Lake Colguape.

*ATTICORA CYANOLEUCA.

Common throughout our journey about the rivers and lakes. A few are seen at Chupat on warm days in the winter; but the great majority leave at the approach of cold weather.

PHRYGILUS CANICEPS†, Burm.

I believe this is only a spring visitor to the Chupat valley; and it is not common.

Iris light rufous; upper mandible dark horn-colour; under one pale horn-colour, tip darker; legs rufous brown, feet and claws black. Not seen during our journey to the lakes.

PHRYGILUS FRUTICETI.

Common at Chupat throughout the spring and summer, and often seen during our journey in the valleys; it never wanders far from water. On the 20th September I took a nest on the hills near the colony: it was a very neat structure of wool, feathers, and the flowers of a grass, and placed in the centre of a thick bush, about a foot above the ground. It contained two eggs, of a pale green ground-colour, thickly marked with dull chocolate spots and streaks.

Iris wood-brown; beak dark flesh-colour, tip of both mandibles and the whole of the upper mandible darkest; legs and feet reddish flesh-colour.

*ZONOTRICHIA CANICAPILLA.

Resident and abundant everywhere. It has a pretty little warble, which it sings in the evening and during the night when the moon is shining; and often whilst lying awake under my "Yergas" and Guanaco robe, this Sparrow kept up its song within a few yards of my head.

Iris wood-brown; legs light horn-colour; feet darker, claws black.

Zonotrichia pileata does not occur in Patagonia.

DIUCA MINOR.

I shot one at Tombo Point on the 31st December, 1877, and have never seen another.

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† [Mr. Durnford has marked his two specimens "*P. caniceps*, Burm." (*Phrygilus caniceps*, Burm., J. f. O. 1860, p. 158, and 'La Plata-Reise,' ii. p. 487), having, we presume, compared them with specimens so named by Prof. Burmeister. We should have expected them to have belonged to the species determined by us to be *Chlorospiza aldunati*, Gay (Ibis, 1869, p. 285); but such is not the case, the breast of Mr. Durnford's bird being of a much deeper orange tint, besides other differences. A revision of this section of *Phrygilus* is necessary when sufficient materials come to hand. —EDD.]

*SYCALIS LUTEOLA †.

Common throughout our journey in the valleys. They congregate in the winter in large flocks, and, I believe, are then partially migratory.

*MOLOTHRUS BONARIENSIS.

A few occasionally observed at Chupat, but not seen during our journey to Lake Colguape.

Iris wood-brown; beak, legs, and feet black.

*AGELÆUS THILIUS.

Resident. Seen commonly throughout our journey whereever there were any reed-beds.

*STURNELLA MILITARIS.

Resident. Common throughout our journey. Of all birds (of course excepting water-birds and reed-loving birds) this is the surest indicator of the presence of water in the thirsty plains of Patagonia, never being found far from this element, and being consequently of great use to travellers.

Beak dark horn-colour, under mandible lightest; legs pale grey; feet and claws darker.

AGRIORNIS MARITIMUS.

I shot one at Tombo Point 31st December, 1877, but did not see any other specimens.

MYIOTHERETES RUFIVENTRIS.

A few visit Chupat in the spring, remaining till the end of the summer; and I observed them occasionally throughout our journey. They often consort with *Oreophilus ruficollis*.

Iris light brown; beak, legs, feet, and claws black.

*TÆNIOPTERA RUBETRA.

Observed at Chupat in September, but rarely. Common in the valley of the Sengel in November.

Iris light fulvous; beak, legs, feet, and claws black.

*LICHENOPS PERSPICILLATUS.

Resident and common everywhere throughout our journey.

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† [Apparently called *S. luteiventris* in the former list. No specimen sent.—EDD.]

Muscisaxicola maculirostris.

On the 2nd December I met with two pairs near the river Sengelen. They do not appear to be common, and frequent rough rocky ground, perching on large stones, from which they sally in pursuit of insects. The male and female are alike. The nest is of grass lined with feathers and wool, and placed on the ground under a large stone.

Iris wood-brown; upper mandible black, basal half of lower mandible yellow, the rest black; legs and feet black.

Centrites niger.

Partially resident; but the great majority migrate northward at the approach of winter. Males of this species were common at Chupat throughout September and during the first few days of October. On the 5th of the latter month I observed the first females, which gradually increased in numbers. I found both sexes abundant near Lake Colguape, in the valley of the Sengel, and in sheltered places on the hills. When I returned to Chupat in December many had gone.

Iris wood-brown; legs, feet, and claws black.

*Hapalocercus flaviventris.

Resident. Pretty common along the valleys and about the lakes.

*Anæretes parulus.

Resident. A few were rarely seen during our journey.

*Cyanotis omnicolor.

Resident and pretty common throughout our journey in reed-beds and swamps.

Geositta cunicularia†.

Seen in the Chupat valley in September, but not common. Not observed during our expedition to the lakes.

*Upucerthia dumetoria.

Resident and common everywhere throughout our journey.

Henicornis phœnicurus.

Resident and common amongst bushes throughout our journey.

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† [No specimen sent.—Edd.]

Iris wood-brown; beak black, under mandible slate-colour. Upper surface of legs and feet dark horn-colour, under surface lighter.

*PHLŒOCRYPTES MELANOPS.

Resident. Common in reed-beds along the valleys of the Sengelen and by the lakes.

LEPTASTHENURA ÆGITHALOIDES.

Resident. Commonly observed amongst bushes throughout our journey.

Iris wood-brown; beak dark horn-colour, base of under mandible lightest; legs, feet, and claws black, under surface grey.

*SYNALLAXIS HUDSONI.

Seen twice during our expedition—at the mouth of the Sengel, and again in the valley of that river.

*SYNALLAXIS SORDIDA.

Resident. Pretty commonly observed during our journey, frequenting bushes.

Iris wood-brown; beak, legs, and feet dark horn-colour, under mandible and under surface of legs and feet lighter.

*HOMORUS GUTTURALIS.

Resident, but rare. Seen occasionally in the hills during our journey.

*STENOPSIS BIFASCIATA.

Resident. Seen on the 14th, and again on the 28th November, on the hills bordering the Sengelen. Whilst camping at Tombo Point one kept flying round our fire at night.

*CONURUS PATAGONUS.

Only seen at Chupat in the spring and summer. I observed a flock on the steep banks of the Sengel in November.

OTUS BRACHYOTUS.

Resident, but not common. Seen near Tombo Point in December.

*NOCTUA CUNICULARIA.

Resident. A few seen in the valleys of the Sengel and Sengelen.

*CIRCUS CINEREUS.

Resident, but most numerous in the winter. On the 26th October we found many pairs nesting on some low swampy land amongst long grass. The nest is a slight hollow in the ground, lined with a few pieces of grass; and the complement of eggs two or three; the latter are of a dirty white colour.

*BUTEO ERYTHRONOTUS.

Resident. On the 15th October I took two eggs from a nest on the hills near the Chupat valley, and shot both old birds, the female from the nest. The male is of a rich slaty grey on the back, whilst the female has some rufous colouring about the back and shoulders. The young of the year, after their first moult, have the head above, shoulders, and back of a rich rufous colour, mottled with darker brown; the neck above has a broad transverse white band, the feathers tipped with black; sides of the head, chest, and stomach light fulvous, with darker markings; throat black, the base of the feathers white; tail of a rich slaty hue, with transverse bars of black.

The adult has the upper mandible dark horn-colour, under one slate-colour; legs and feet pale orange; iris dark orange.

In the young of the year the beak and legs are slate-colour, iris light orange.

The eggs are of a pale bluish white, slightly streaked and speckled with rufous markings, chiefly at the larger end, and measure 2·3 × 1·7 inches.

I observed this species commonly on the hills throughout our journey. It feeds on mice and small rodents.

*GERANOAETUS MELANOLEUCUS.

Resident, but not common, and never seen far from the sea. On the 30th December, at Tombo Point, I found a nest containing two young birds just about to fly. The nest was high up on a ledge in a deep rocky gully. The young birds in this stage have the head and shoulders dark umber-brown, edges and bases of feathers lightest; back dark rufous brown and black; primaries have black tips, edged with white; secondaries and tertials marbled with dusky white and black; tail black, marbled with grey; chest and stomach rufous, streaked with black; thighs rufous and black; iris light orange; legs pale primrose-yellow.

HYPOTRIORCHIS FEMORALIS.

Resident, but most numerous in the winter. We saw it but rarely during our journey. A nest found on the 3rd of November was placed on the top of a thick thorn-bush, and formed of twigs and sticks, lined with grass. It contained three eggs, in colour rich yellowish red, thickly speckled all over with dark rufous spots. This is the swiftest Hawk in Patagonia.

*TINNUNCULUS SPARVERIUS.

Resident, and frequently observed throughout our journey.

*POLYBORUS THARUS.

Resident and abundant everywhere. The plumage of this species varies exceedingly. I have seen some nearly as light as cream-colour, and from that to the ordinary brown. This variation, however, as far as I am aware, does not occur in Buenos Ayres†.

*MILVAGO CHIMANGO.

Resident and abundant everywhere.

*SARCORHAMPHUS GRYPHUS.

Commonly observed throughout our journey wherever the rocks were high and steep. Several pairs were nesting on the 16th November on the ledges of some rocks in the valley of the Sengel; but I was unable to get at the nests.

*PHALACROCORAX BRASILIANUS.

Resident. Common on the Sengel and Sengelen. Every evening large flocks ascend the river Chupat for many miles, flying in from the sea, and fish in the river during the night.

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† [This remark of Mr. Durnford's throws much light on the question as to the specific validity of the curious specimens of *Polyborus* from Patagonia now living in the Zoological Gardens, of which figures were given in the 'Proceedings' for 1876, pl. xxv.—EDD.]

PHALACROCORAX, sp. ? †.

A few frequent the rocks at the mouth of the Chupat; but they never ascend the river like *Phalacrocorax brasilianus.* On the 30th December I found about sixty pairs nesting on Tombo Point. They had chosen the most inaccessible ledges of the rocks; and each nest contained one egg or a young bird, the former of a dirty white colour. I secured a young bird in down after some difficulty. It has the head, neck, and the whole of the upper parts, the lower part of the stomach, and thighs sooty black, breast and upper part of the stomach mottled with white, iris dark brown, naked skin round the eye red, legs and feet and beak very dark lead-colour.

ARDEA COCOI.

Not uncommon in the Chupat valley and along the Sengel and Sengelen.

ARDEA EGRETTA.

Occurs occasionally at Chupat. I was credibly informed by one of the colonists that this bird once nested in a reed-bed in the Chupat valley; and my informant discovered the nest whilst cutting the reeds. I saw one specimen on the Sengel.

Iris light orange; beak dark orange; legs, feet, and claws black, soles of feet primrose.

*NYCTICORAX OBSCURUS.

Resident, but not numerous. Seen once on the Sengel.

CICONIA MAGUARI.

Seen in October in the Chupat valley, and in November at the mouth of the Sengel.

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† [Mr. Durnford considers this Cormorant to be *P. carunculatus* (Gm.); but as he has not sent a specimen, it is questionable whether it is really this species, so great is the confusion prevailing respecting the Cormorants of this group.—EDD.]

THERISTICUS MELANOPIS.

A few seen on the 10th November at the mouth of the Sengel, and subsequently observed in the Chupat valley. I believe a few pairs were breeding on some swampy ground in the latter place, as I was informed that some large pale bluish eggs had been found in the swamp where I had seen the birds. I was unable, however, to trace them.

*PHŒNICOPTERUS IGNIPALLIATUS.

Partially resident, but occurring in greatest numbers in the winter. Common about Lake Colguape and the river Sengel.

BERNICLA MAGELLANICA.

Winter visitant to the Chupat valley, arriving in March and leaving in September. Resident about Lake Colguape, where it breeds plentifully, laying seven or eight eggs in a warm nest of down and feathers. We found the eggs excellent eating.

In the adult male the iris is wood-brown; legs, feet, and beak black.

BERNICLA POLIOCEPHALA.

Winter visitor to the Chupat valley, arriving and departing with *B. magellanica*, and always associating with that species. It nests about Lake Colguape, in the same places as *B. magellanica*.

In the adult female the iris is orange; beak black; legs orange, uppersides with a line of black; feet and claws black, the former with a little orange.

*CYGNUS NIGRICOLLIS.

Partially resident, but most numerous in the winter. These birds were nesting in the reed-beds at the mouth of the Sengelen; and the old birds were seen carrying the young on their backs. Common up the Sengel as far as we went.

*CYGNUS COSCOROBA.

Not observed at Chupat during my last visit, nor during our journey to the lakes.

*QUERQUEDULA CYANOPTERA.

Resident, but rare. Seen once at the mouth of the Sengel.

*QUERQUEDULA FLAVIROSTRIS.

Resident. Common throughout our journey, and nesting at the mouth of the Sengelen.

*QUERQUEDULA VERSICOLOR.

Resident. The same remark applies to this as to *Q. flavirostris.*

*DAFILA SPINICAUDA.

Resident, and common in the valleys of both the Sengel and Sengelen.

*MARECA SIBILATRIX.

The commonest Duck met with during our journey, and nesting abundantly at the mouth of the Sengelen.

*SPATULA PLATALEA.

Resident. Common up the Sengelen and Sengel. Near the mouth of the former river, just after it leaves the lake, there exists a chain of small lagoons surrounded by extensive reed-beds, and forming a perfect paradise for Ducks, Geese, and Coots, which there abound.

*ERISMATURA FERRUGINEA.

Resident. Pretty common in lagoons bordering the Sengelen and Sengel, where I observed a curious habit of the male bird. When he is enraged at the presence of an intruder in his haunts, he puffs out his breast to its fullest extent; and bringing down his beak on the hollow thus formed with considerable force, a curious drumming noise is produced, which I have heard at a distance of fifty yards. At the same time he raises and expands his tail, and, swimming round and round to display his terrors, appears a ridiculous picture of defiance.

*COLUMBA MACULOSA.

Resident. Commonly observed throughout our journey.

FULICA ARMILLATA.

Common in the lakes and on the Sengel and Sengelen. The adult has the beak and shield primrose-yellow, the latter large and oval; the base of upper mandible and small portion of shield bright blood-red. Legs olivaceous, with a pale red garter round the thigh.

*FULICA LEUCOPYGA.

Not so common as *F. armillata,* but found always in the smaller lagoons and pools in the valleys of the Chupat, the Sengel, and the Sengelen. The chick is covered at first with black down, with the exception of the neck and throat. The neck has the down mixed with orange and bright red, whilst the throat has some blood-red down on it. The beak has a bright-red band near the tip, surrounding both mandibles.

*VANELLUS CAYENNENSIS.

Resident. Common in the valleys throughout our journey.

EUDROMIAS MODESTUS.

Large flocks came to the Chupat valley about the middle of April, but only remained a few days. They arrived with a strong S.E. wind. The flocks were chiefly composed of immature birds; but there were some adults.

ÆGIALITIS FALKLANDICA.

Resident, and frequently observed on the banks of Lake Colguape, and subsequently up the Sengel.

I took fresh eggs and also young in down of this species on the 29th September from the shores of a large brackish lagoon near the Chupat valley. The nest is a mere hollow scraped in the sand, and paved with fragments of small shells. The eggs are of a sandy ground-colour, spotted and streaked (chiefly at the larger end) with black. They measure 1·4 × 1 inch.

The young of the year, in their first plumage, have the top and side of head, shoulders, and back mottled with dull yellowish and brown, the breast and stomach dirty white. They show no signs of the fine rufous markings on the head and neck of the adult, and but very faint traces of the double black breast-band. The adult and young in first plumage have the iris wood-brown; beak, legs, feet, and claws black.

*OREOPHILUS RUFICOLLIS.

Partially resident, but most numerous in the spring, when many cross the Chupat, going southwards. It was nesting on the hills bordering the valley of the Sengel, and generally seen throughout our journey. On the 30th December I caught two chicks on Tombo Point: they are pretty little downy things, mottled all over with light and dark chocolate and white.

The adult has the iris wood-brown, beak black, legs flesh-colour, feet and claws black.

HÆMATOPUS PALLIATUS.

Several pairs were observed on Tombo Point in December; and the bird occasionally occurs at the mouth of the Chupat. It was nesting in the former place; but I failed to discover the eggs.

HÆMATOPUS ATER.

Seen on Tombo Point in December. I never observed it at Chupat.

Iris dark orange; beak dark pink; legs and feet greenish yellow.

*THINOCORUS RUMICIVORUS.

Resident; abundant throughout our journey. I took eggs at the end of October; and the young were running in the middle of November: but this species probably has two or more broods in the season; for I found chicks in March. The nest is a slight depression in the ground, sometimes lined with a few blades of grass; and before leaving it the old bird covers up the eggs with little pieces of stick. The eggs are pale stone ground-colour, very thickly but finely speckled with light and dark chocolate markings; they have a polished appearance, and measure 1·3 × ·8 inch.

The chick is finely mottled all over with light and dark brown. It has the beak pale horn-colour; legs flesh-colour; iris wood-brown.

*RHYNCHÆA SEMICOLLARIS.

Rare in the Chupat valley. Not observed during my visit to the lake.

TRINGA FUSCICOLLIS.

Resident. Very common in the valleys of both the Sengel and the Sengelen, and seen always in flocks.

CALIDRIS ARENARIA.

I did not observe this species at Chupat during my last visit; neither did I see it during my journey to Lake Colguape. I shot two out of a flock at Tombo Point on the 30th December.

*GAMBETTA FLAVIPES.

Not observed at Chupat during my last visit. Seen occasionally on the Sengel.

*LIMOSA HUDSONICA.

Not observed at Chupat during my last visit, or during our expedition to Lake Colguape.

NUMENIUS BOREALIS.

From the 8th to the 10th October large migratory flocks passed the Chupat valley, flying south. They made a very short stay in the valley, but long enough to enable me to secure two examples. Not seen again.

Iris wood-brown; beak black; legs and feet dark slate-colour.

*STERNA HIRUNDINACEA.

Resident. A few observed about Lake Colguape, and subsequently seen on the Sengel. There is a large ternery of this species on Tombo Point. I was prepared when I visited this place in December to see a considerable quantity of birds; but the number that met my eyes fairly staggered me. These nests cover an area about 150 yards square. Allowing three nests and five eggs for every square yard (a very moderate computation, it being difficult to walk without treading on the eggs), we arrive at the extraordinary number of 67,500 nests, 135,000 birds, and 112,500 eggs; and, wonderful as these figures may appear, I feel sure that I have rather understated than overstated the numbers. The nests were mere hollows in the fine gravel or shingle, and contained one, two, and sometimes three eggs. The latter generally have the appearance of the eggs of the Sandwich Tern, though of course smaller; and out of many hundreds I did not see two alike.

*LARUS DOMINICANUS.

Resident. A few seen near Lake Colguape. I found about fifty pairs nesting on Tombo Point in December. They make a large structure of grass and seaweed; and most of the nests contained two or three eggs.

*LARUS MACULIPENNIS.

Resident. A few birds observed up the Sengel and about the lake.

Last year many pairs nested in the valley of the Chupat. They chose some low swampy land, which had been flooded for the purpose of growing wheat in 1876, and on which the following year a thick growth of rushes had sprung up. The nests were made of grass and weeds, and placed in the water. I secured about a dozen eggs and one or two old birds.

ÆCHMOPHORUS MAJOR.

Resident. Observed constantly in a large brackish lake in the Chupat valley in September, and subsequently seen in lagoons in the valleys of the Sengel and Sengelen, and in Lake Colguape.

*PODICEPS CALIPAREUS.

Resident, and commonly seen in lagoons in all the valleys.

Iris between crimson and scarlet; beak dark horn-colour; legs pale slate.

TACHYBAPTES DOMINICUS.

Resident, and common in lagoons in the valleys of the Chupat, the Sengelen, and the Sengel.

*NOTHURA PERDICARIA†.

Resident. This species was wrongly named *Nothura ma-*

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† [Mr. Durnford has not sent specimens of this bird, which we have little doubt is the "*Perdix chico*" of Mr. Hudson's paper on the birds of the Rio Negro, Patagonia (P. Z. S. 1872, p. 547). At that time Sclater determined this to be *Nothura darwini*, Gray, a species we now consider identical with *N. boraquira* (Spix) (Nomencl. p. 153).—EDD.]

culosa in my last communication (Ibis, 1877, p. 45). I obtained specimens in the Chupat valley, and saw it occasionally in the valleys of the Sengel and Sengelen.

Iris reddish brown; upper mandible wood-brown; under mandible, legs, and feet pale slate-colour.

*CALODROMAS ELEGANS.

Resident. Seen constantly throughout our journey; and we found the eggs excellent eating.

This species is increasing at Chupat with the increased cultivation of the ground.

*RHEA DARWINI.

Resident. Observed almost daily throughout our journey. It commences to lay in September; and though I have heard of thirty-seven eggs being found in one nest, twenty-seven is the largest number I have seen. The nest is a large hollow scraped in the ground, slightly lined with grass. The young run as soon as hatched; and the male bird will feign lameness to draw one away from the nest. The Indians say the eggs take six weeks to hatch. In the summer, when the lagoons in the camp become dried up, many visit the river Chupat to drink, and then fall an easy prey to the colonists' dogs. These, however, mostly consist of birds of the year. At this season both old and young occasionally come to the river.

XXX.—*Additional Notes on the Ornithology of Transvaal.*

By THOMAS AYRES. Communicated by JOHN HENRY GURNEY.

[Continued from p. 301.]

[THE following notes unfortunately did not reach me in time to be incorporated with those which recently appeared in 'The Ibis, *vide anteà*, p. 281.—J. H. G.]

304. CYPSELUS CAFFER, Licht. African White-rumped Swift.

Male, shot at Potchefstroom 11th December. Irides dusky; bill black; tarsi and feet pale dusky.

305. CYPSELUS APUS (Linn). Swift.

Male, shot at Potchefstroom 12th January, 1878.

To-day numbers of these Swifts were hawking over the open country and surrounding marshes in company with Swallows and Martins, mostly *Hirundo rustica* and *Cotyle paludicola,* but with a few of *Cotyle cincta, Hirundo albigula,* and *Hirundo cucullata.* It is very rarely that these Swifts are seen here in numbers.

[Two other specimens sent with the above were shot on the 15th of January: of the three, one is an adult bird; but the other two show remains of immature plumage, and are in the stage which I formerly erroneously supposed to belong to a species specifically distinct and peculiar to South Africa (see 'Ibis,' 1868, p. 152).

In a note sent to me by Mr. Ayres, in a previous year, he mentions having seen a good many of these Swifts, one of which he shot, flying northwards, early in the day, on the 8th of February.—J. H. G.]

COTYLE FULIGULA (Licht.). Brown Martin.

The specimen sent was shot at Potchefstroom in January, and was one of a pair which were hawking about the buildings of the town. This species is one of the scarcest of the Swallow tribe in these parts.

CHRYSOCOCCYX CUPREUS (Bodd.). Didric Cuckoo.

Male, shot at Potchefstroom in December. Irides red.

Female, shot at Potchefstroom in October. The ovary contained a whitish egg with dusky markings.

[The plumage of the male bird above mentioned agrees generally with the description of the "adult" in Sharpe's edition of Layard, p. 155; an apparently younger male, shot by Mr. Ayres on the 12th March, differs in having hepatic spots remaining on the primaries, contiguous to the white spots, but nearer to the shaft of the feather; also in the white bars on the inner surface of the primaries and secondaries being somewhat more numerous and in closer propinquity, and in the feathers of the chin and throat being of a metallic green, merely edged with white, instead of their being entirely white, as in the adult bird, the green on these feathers assuming the form of longitudinal marks; the entire breast is barred transversely with markings of a similar colour on a white ground, instead of being wholly white, as in the adult.

The female mentioned above seems also to be in partially immature dress, all the quill-feathers of the wings and tail being more or less variegated by hepatic spots; the throat and head show traces of dark green markings similar to those on the same parts in the immature male previously referred to; but in the present specimen these have nearly disappeared, and the remainder of the plumage resembles that of the adult male, with the exception of a slight tinge of coppery brown, extending over the upper part and sides of the head and neck, the lesser wing-coverts, the throat, and the breast.—J. H. G.].

COCCYSTES SERRATUS (Sparrm.). Crested Black Cuckoo.

Male, shot 3rd November on the rocky ranges near Potchefstroom. It was one of a pair, of which the other bird, presumably the female, was excessively noisy. The stomach of the bird sent contained caterpillars.

CISTICOLA TINNIENS (Licht.). Le Vaillant's Fantail.

[It would seem that the males of this species are more readily obtained than the females; for of twelve dissected specimens forwarded to Mr. Ayres, ten are marked as males and only two as females. A specimen ticketed by Mr. Ayres as "male immature, shot 19th December," is much less dark on the upper surface than the adult birds, and bears a striking resemblance to *C. chiniana,* from which, however, it may be readily distinguished by the darker colour of the rectrices, and especially of the central pair, which are blackish brown, edged and tipped with paler wood-brown.—J. H. G.].

BRADYPTERUS BRACHYPTERUS (Vieill.). Pavaneur Reed-Warbler.

Male and female, shot near Potchefstroom on the 12th and 19th of December, the appearance of the abdomen in the female indicating that she was a sitting bird.

At this season the loud and harsh call-notes of this bird may be heard from all parts of the rushy swamps, the note much resembling the cry of *Merops superciliosus*, which that Bee-eater utters whilst sailing high in the air.

ACROCEPHALUS BÆTICATUS (Vieill.). Lesser South-African Reed-Warbler.

Male, shot near Potchefstroom on the 12th of January, amongst the sedges and reeds bordering the swamp, showing that these birds frequent the sedges as well as the willow-hedges. Another specimen, obtained the 12th of December, was also shot amongst the sedges.

PHYLLOSCOPUS TROCHILUS (Linn.). Willow-Warbler.

Male, shot at Potchefstroom 30th November, whilst it was hunting for insects amongst high weeds.

[The plumage of this specimen is very much abraded.—J. H. G.]

MYRMECOCICHLA FORMICIVORA (Vieill.). Southern Ant-eating Wheatear.

Male, commencing the assumption of the white shoulders; shot 7th June on open grassland near Potchefstroom. Stomach contained beetles, bugs, and ants.

306. MUSCICAPA GRISOLA, Linn. Spotted Flycatcher.

Female, shot at Potchefstroom 7th January.

[An adult bird, but moulting.—J. H. G.].

PYCNONOTUS NIGRICANS (Vieill.). Brunoir Bulbul.

Male, shot at Potchefstroom 8th January. Irides bright reddish hazel; eyelids orange; head black.

[This specimen agrees with the male previously mentioned, *vide anteà*, p. 295.—J. H. G.]

JUIDA BICOLOR (Gmel.). White-rumped Grakle.

Male, shot 12th September.

These birds appear to be pretty well omnivorous; they are now eating my young peas, just out of the ground; they come eight or ten together and nip off the leaves and stalks with the greatest ease.

Megalophonus cinereus (Vieill.). Lesser Rufous-capped Lark.

Male, shot Januury 2nd.

Female, shot July 16th; both near Potchefstroom.

These Larks are easily distinguished when in the field by the chirruping note they utter on rising.

Alauda conirostris, Sundev. Pink-billed Lark.

Male. Irides hazel; bill pale ashy, with the ridge very light brown; tarsi and feet pale flesh-colour. Total length $5\frac{5}{8}$ inches, bill from gape $\frac{9}{16}$, tarsus $\frac{7}{8}$, wing $\frac{3}{4}$, tail $1\frac{7}{8}$.

The bird sent was one of a pair, and was shot on 14th November on the open flats just outside the town of Potchefstroom. Its stomach contained insects.

[An unusually pale specimen of this scarce little Lark, the feathers on the under surface, and the broad margins on those of the upper, being a pale drab, instead of the usual dark rufous brown, and the normal pink tint being absent from the bill. The bird is commencing its moult; and some new feathers on the upper surface exhibit rather darker margins than the old ones, though less deeply coloured than in previous specimens which have come under my notice.—J. H. G.].

Coturnix dactylisonans (Bodd.). European Quail.

[Mr. Ayres forwards three adult specimens, killed respectively on 28th March and on 16th and 17th July. The first of these, a male, has the rufous portions of the plumage of a richer tint than I ever remember to have seen in a bird of this species.—J. H. G.]

Eudromias asiaticus (Pall.). Caspian Dotterel.

Male, shot 19th September. Stomach contained beetles and other insects. These Plovers make their appearance in these parts at this season about the time when the first heavy rains fall, and are pretty plentifully scattered along the valley of the Mooi river, frequenting the bare grass-lands, which at this time of year are all but devoid of herbage, in flocks of from six to twenty or more. On rising they have much the appearance of *Glareola melanoptera,* and utter much the same short stridulous note of alarm; they run with considerable swiftness.

[Mr. Ayres forwards, in all, eight of these Plovers, all shot in September, and four of them still retaining some remains of the rufous gorget assumed during the breeding-season.—J. H. G.].

GALINAGO MAJOR (Gmel.) Solitary Snipe.

Male, a moulting specimen, killed 16th January.

GALLINAGO ÆQUATORIALIS, Rüpp. Black-quilled Snipe.

Female, a moulting specimen, killed 27th December.

[In a letter dated 30th April, 1878, Mr. Ayres mentions, as an unusual circumstance, that these Snipes were at that time breeding near Potchefstroom, their more usual nesting-time being in August*.—J. H. G.]

307. TRINGA SUBARQUATA, Gmel. Curlew Sandpiper.

The specimen sent was shot 24th November on some mud-banks in a swamp near Potchefstroom, in company with several others of this species and of other Sandpipers, including *Tringa minuta*.

[The bird sent is in full winter dress.—J. H. G.]

HYDROCHELIDON LEUCOPTERA (Temm.). White-winged Tern.

Male and female, immature, shot 24th November.

Several of these Terns were hawking over a swamp some eight miles from Potchefstroom, with a slow, uncertain, wavy flight. The stomachs of those sent contained insects.

XXXI.—*Remarks upon the* Phasianus ignitus *of Latham and the allied Species*. By D. G. ELLIOT, F.R.S.E. &c.

IN a communication to this Journal published in the January number of the present year, I stated that as soon as I should have an opportunity of examining the specimen of the Fire-backed Pheasant with chestnut flanks, referred by Mr. Sclater to *Phasianus ignitus*, Lath., I would give my opinion as to its specific value. On a late visit to London I found in the collection of the British Museum a single specimen of this form, presented by Mr. J. R. Reeves, and stated on the stand to have been brought from China! Before giving a description of the plumage of this example, it will be as well, perhaps, to recall what is published by Latham of this bird in his 'Index Ornithologicus,' Suppl. p. lxi (1801). It is as follows:—

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* *Conf.* Ibis, 1869, p. 302.

"PHASIANUS IGNITUS. Ph. niger chalybeo-nitens, lateribus corporis rufis, dorso imo igneo-ferrugineo, rectricibus intermediis subfulvis. Habitat in Java?" &c.

The first impression received on looking at the British-Museum specimen was, that, so far as the flanks and belly were concerned (the chief points of specific difference), it was not in perfect plumage; and I regret that more examples are not available for comparison. The feathers of these parts exhibit an uncertain, irregular, and in some places, I may say, an abnormal style of coloration, that gave rise at once to the belief that either the bird was passing through a transformation incidental to a change of plumage towards the fully adult state, or else to a suspicion, growing stronger as the examination proceeded, that it belonged to a hybrid. On both sides of the breast, below the dark blue, are numerous chestnut feathers whose centres and tips are more or less streaked with *white*, a hue that cannot surely be considered as proper in that place, although it may be an unsuccessful effort to portray the white central streaks of the flank-feathers observed in the bird I designate in my "Phasianidæ" as *P. ignitus*, a bird which, perhaps, was possibly one of its progenitors. The feathers of the abdomen, with the exception of those exactly in the middle, are chestnut, tipped or margined with black in a most irregular way, sometimes the apical portion of a feather being chestnut and all the rest black. I judge from this that these feathers are in the process of change to an entirely chestnut hue, possibly like those of *P. nobilis*. Two specimens of this last, adult males from Borneo, are also in the collection, both of which have the centre of the abdomen *black*, and the base of the chestnut feathers also of that hue, which is occasionally perceptible through that chestnut colour; and therefore there is nothing about these parts which would entitle the "Chinese" individual to put forward a claim to a distinct rank. If we turn to the back, it is observed that the colouring of the lower part in the "Chinese" example is lighter than that of *P. nobilis*, and more like the bird called by me *P. ignitus* (*P. vieilloti*, Sclater); but I find that the two specimens of *P. nobilis* differ in this respect, one being much darker than the other; so there is evidently a variation in the hues of the rump, and it is not impossible that specimens may be found of *P. nobilis* as lightly coloured on the back as is this "Chinese" one. Another feature in this unsatisfactory bird is the colour of the median rectrices. This is *white*, and therefore does not answer to Latham's description of *P. ignitus*, as he uses the term *subfulvus* to describe the hue of these feathers. The median rectrices of *P. nobilis*, so far as I am aware, although they vary from a dark to a light buff, never become white, which, however, is the colour of those in the birds called *P. vieilloti* by Sclater. The points therefore of difference between this "Chinese" example and the two well-known species are these:—From *P. nobilis* it differs chiefly in the white central rectrices; and from *P. ignitus*, or *vieilloti*, as this form has been called by naturalists, it differs in the chestnut flanks. The bird may be said to represent exactly an intermediate stage between the two species just named, with indications strongly suggestive of hybridism; and as its origin is open to serious doubt, and as it is without any name certainly applicable to it (Latham's description of *P. ignitus* not agreeing, as already shown), its status can only be satisfactorily determined when the exact locality from which the bird comes is first authentically ascertained. The habitat "China" attached to the specimen cannot be considered as the true one; for no such form as *Euplocamus* is found in China; and as the specimen undoubtedly came from that land, the bird has probably been bred by the Chinese, possibly by mating together the two species already recognized. In support of the view that the specimen has been in captivity, I would add that nearly half the primaries have been cut away, evidently to prevent its escaping, which would certainly not have been the case if the bird had been killed wild. As I formerly suggested might be the case, I now consider *P. ignitus* of Latham the same as *P. nobilis* of Sclater, the latter name becoming a synonym; and the second species, called by me *P. ignitus*, should be known as *P. vieilloti*; for, judging by the specimen in the British Museum, I fail to perceive any indications that would prove the existence of a third species of this section of the genus *Euplocamus*.

XXXII.—*Contributions to the Ornithology of Borneo.* By R. Bowdler Sharpe, F.L.S., F.Z.S., &c. Part III.* *On two Collections of Birds from Sarawak.*

Of two collections which I desire to notice in the present paper, one is a small one made by one of Governor Ussher's hunters during a three days' stay at Sarawak. The man, by name Buak, was unfortunately seized with panic, and fled to Labuan for fear of the Dyaks, much to the Governor's disappointment; we shall hear of him again in our next paper, which will contain an account of Governor Ussher's consignments from North-western Borneo and Labuan. The following is a list of the collection of Sarawak birds sent me by Governor Ussher:—

1. *Microhierax fringillarius* (Drap.).
2. *Calorhamphus fuliginosus* (Temm.).
3. *Megalæma mystacophonus* (Temm.).
4. *Surniculus lugubris* (Horsf.).
5. *Coccystes coromandus* (Bodd.).
6. *Halcyon concreta* (Temm.). New to Sarawak.
7. *Dendrochelidon comata* (Temm.).
8. *Leucocerca perlata* (S. Müll.).
9. *Philentoma velata* (Temm.).
10. *Philentoma pyrrhoptera* (Temm.).
11. *Chaptia malayensis*, Hay.
12. *Dicrurus annectens*, Hodgs. New to Borneo.
13. *Dissemurus brachyphorus* (Temm.).

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* For Part II., see 'Ibis,' 1877, p. 1.

14. *Arachnothera robusta,* Müll. & Schl.
15. *Phyllornis sonnerati* (Jard. & Selby).
16. *Phyllornis viridinucha,* Sharpe.
17. *Pycnonotus plumosus,* Blyth.
18. *Trichophoropsis typus,* Bp.
19. *Criniger,* sp.?
20. *Trichixus pyrrhopygus,* Less.
21. *Oriolus xanthonotus,* Horsf.
22. *Platysmurus aterrimus* (Temm.).
23. *Platylophus coronatus* (Raffl.).
24. *Anous leucocapillus,* Gould. New to Borneo.

The second collection is a more important one, consisting of a large consignment of bird-skins sent by Mr. H. H. Everett —a brother of Mr. Alfred Everett, already well known from his ornithological researches in Borneo, and more recently in the Philippines. Mr. Henry Everett has been supplementing his brother's previous collections in Sarawak, and very kindly submitted the whole lot to me before their dispersion. I am thus enabled to record the occurrence of several species not previously noticed in the island of Borneo.

In this paper I have noticed some species of interest in addition to those recorded for the first time as Bornean, and have, as usual, referred to Count Salvadori's 'Uccelli di Borneo' as the most important work on the subject.

1. Spizaetus limnaetus (Horsf.); Sharpe, Cat. B. i. p. 272.
Spizaetus caligatus (Raffl.); Salvad. *t. c.* p. 13.
Spizaetus limnaetus (Horsf.); Salvad. *t. c.* p. 15.

A specimen in adult plumage, but not of such a dark brown colour as is seen in the Labuan examples sent by Governor Ussher. Doria and Beccari brought back two heads of this Eagle from Sarawak.

2. Psittinus incertus (Shaw); Salvad. *t. c.* p. 25.

A series of specimens, though this is the first recorded appearance of the species near Sarawak.

3. Chrysococcyx basalis (Horsf.); Salvad. *t. c.* p. 62.

Not previously noticed from Sarawak. Mr. Everett's bird bears the following label:—"Male. Tagora, Dec. 17, 1877. Eyelids and iris bright red; bill black."

4. Carpococcyx radiatus (Temm.); Salvad. *t. c.* p. 76.

Not previously known from Sarawak.

5. Batrachostomus stellatus (Gould); Salvad. *t. c.* p. 113; Tweeddale, P. Z. S. 1877, p. 436, pl. xlvii.

An adult specimen in rufous brown dress. Doria also obtained one at Sarawak; and Lord Tweeddale also possesses an example, collected at Bedi, North-western Borneo, by Mr. Alfred Everett.

6. Tephrodornis gularis (Raffl.); Sharpe, Cat. B. iii. p. 278.

An adult bird.

7. Stoparola thalassoides (Cab.); Salvad. *t. c.* p. 133.

An adult example.

8. Cyornis rufifrons, Wall.; Salvad. *t. c.* p. 131.

Cyornis beccariana, Salvad. *t. c.* p. 131.

Mr. Everett has sent a series of this very fine species, which enables me to settle the vexed question regarding the names *C. rufifrons* and *C. beccariana,* as I have now before me adult males, an adult female, and a young male; and I can affirm that Count Salvadori's type specimens of *C. beccariana* could not have been quite adult, any more than the type of Mr. Wallace's *C. rufifrons* is. The following is a description of the species in several stages:—

Adult male. General colour above bright smalt-blue, the crown deep ultramarine, causing the eyebrow and forehead, which are bright smalt-blue, to stand out in bold relief; scapulars and median wing-coverts ultramarine, with a slight wash of smalt-blue; the lesser coverts bright smalt-blue; greater coverts, primary-coverts, and quills black, edged with ultramarine; tail-feathers black, all but the outer one on each side externally bright blue, richer ultramarine than the wings, and not so brilliant as the back; feathers in front of the eye black; sides of face and ear-coverts black, washed with blue; under surface of body bright orange-rufous, creamy buff in the middle of the abdomen; thighs blue-black on the outer aspect, orange buff on the inner; under wing-coverts orange; quills dusky brown below, with slightly paler brown edgings to the inner webs. Total length 5·7 inches, culmen 0·55, wing 2·9, tail 2·35, tarsus 0·6.

Adult female. Different from the male. General colour above tawny brown, duller on the head, inclining to foxy chestnut on the upper tail-coverts; the tail chestnut-red; wing-coverts dull brown, edged with tawny brown, so that they appear like the back; the greater coverts and the quills more narrowly edged; the innermost secondaries light fulvous brown, edged with tawny, with indistinct cross lines of dark brown; forehead, eyebrow, and a ring round the eye tawny; in front of the eye a triangular patch of dull fulvous; sides of face dull ashy brown, with a faint wash of fulvous; cheeks and under surface of body orange-buff, richer on the breast; the lower abdomen fulvescent white; under wing-coverts pale orange-buff. Total length 5·9 inches, culmen 0·55, wing 2·7, tail 2·25, tarsus 0·55.

Young male. Like the old female, but darker, and with light buff shaft-lines, the lower back with a bluish shade, the upper tail-coverts bright smalt-blue; the tail dull blue, instead of chestnut; wing-coverts and secondaries tipped with orange-buff; forehead, eyebrow, and sides of face deep orange-buff; under surface of body more richly coloured than in the female, the breast being bright orange as well as the flanks.

Between the first or female stage of plumage and the fully adult dress, the male of this Flycatcher passes through several transitional grades; and the first of these is when his principal differences are his blue tail, bright orange breast, and orange-tipped wing-coverts; otherwise he greatly resembles the female. It is unfortunate that the species must bear the name of *rufifrons*, as, when adult, the forehead is brilliant blue, and the type of *C. rufifrons* in the British Museum shows that the species is founded on a male which has gained almost perfect plumage but still retains the rufous eyelid and rufous lores of his "female dress." The plumage of the head has been somewhat disarranged in the skinning of the bird, and the loral plumes so placed as to make it appear as if the bird had a rufous forehead; from the same reason a blue feather appears in the upper throat, which seems to me to have been forced out of position from the cheeks. It was the presence of these blue feathers in the upper throat that induced Mr. Wallace to describe the chin as "blue-black;" but in reality the chin is rufous, and then just below occur these straggling plumes, which, as I think, are due to the preparation of the skins*. That the bird is not quite adult is shown by the fact of the orange tips remaining on some of the wing-coverts; and the blue is not so bright as in the adult bird. The type of Salvadori's *C. beccariana* must have been in very similar plumage, being nearly in full dress but retaining the rufous lores of an earlier stage.

9. CYORNIS UNICOLOR, Blyth.

Cyornis cyanopolia (Boie); Salvad. *t. c.* p. 132.

Mr. Blyth has stated that a Bornean example of this species exists in the Leyden Museum; and the question of the locality is now settled by Mr. Everett, who sends an adult male, a female, and a young individual moulting out of its mottled or Robin-like plumage. I have compared it with specimens from Malacca and the Eastern Himalayas (the latter presented to the Museum by Mr. L. Mandelli), and I find the specimens from all these localities identical.

10. TIMELIA LEUCOTIS, Strickl.; Gray, Handl. B. i. p. 315, no. 4697.

Another bird new to Borneo. Compared with Malaccan and Javan examples.

11. IXIDIA PAROTICALIS, sp. n.

I. similis *I. cyaniventri,* sed major: colore capitis schistaceo, undique saturatiore: plagâ anteoculari triangulari, genis, et regione paroticâ nigricantibus: long. tota 6·3, culmen 0·55, alæ 2·95, caudæ 2·45, tarsi 0·55.

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* [The introduction of these erroneous characters into the description of *C. rufifrons*, together with the inappropriateness of the name, would, as it seems to us, justify the rejection of Mr. Wallace's title altogether in favour of the next-given name.—EDD.]

The appearance in Borneo of an *Ixidia* allied to *I. cyaniventris* is an event of some interest, as adding another species to the avifauna of the island. I have described the present specimen as new to science, although undoubtedly closely allied to the Malaccan *I. cyaniventris*. It is, however, certainly larger, and is brighter in colour, especially on the wing-coverts, which have bright golden-yellow margins: the hoary eyebrow is much more distinct in consequence of the anteocular feathers and the ear-coverts being blackish. The whole tone of the grey colour of the head and underparts is darker, the sides of the face being black, which is not the case in the Malayan representative. The wing of the latter bird, of which I have four specimens before me, does not exceed 2·85 inches.

12. IXIDIA SQUAMATA (Temm.); Salvad. *l. c.* p. 201.

This species was first discovered in Borneo by Doria and Beccari. A specimen is now sent by Mr. Everett.

13. MICROTARSUS MELANOLEUCUS, Eyton; Salvad. *t. c.* p. 202.

One specimen.

14. ÆTHOPYGA TEMMINCKI, Müll.; Shelley, Monogr. Cinnyridæ.

An adult male. This is the first record of this Sunbird in Borneo.

15. EXCALFACTORIA CHINENSIS (L.); Salvad. *t. c.* p. 311.

Procured by Motley at Banjermassing. Not previously sent from Sarawak.

16. LIMOSA BAUERI, Naum.; Salvad. *t. c.* p. 331.

Mr. Everett sends a single specimen in winter plumage; and this is the first authentic occurrence of the species in the island of Borneo. Count Salvadori enters it in his book as a bird likely to be met with, as it has been killed in many of the surrounding islands.

XXXIII.—*Notes on the Birds of Michalaski, Norton Sound.*

By Surgeon Edward Adams.

[This paper was sent us by Mr. H. Stevenson, to whom it was intrusted by relatives of the late Mr. Adams. As it refers to the birds of a region that has only recently been studied by American naturalists, and as the biographical notes are of considerable interest, we have no hesitation in publishing the paper as it stands. The chief authorities on the birds of these islands of the Pacific coast of North-western America are Messrs. W. H. Dall and H. M. Bannister, whose "List of the Birds of Alaska, with Biographical Notes," published in the 'Transactions' of the Chicago Academy of Sciences, is doubtless familiar to many of the readers of 'The Ibis.' We have added references to this paper where the species are included in Mr. Adams's list. It will be observed, from the date when Mr. Adams's observations were made (1850–51), that, had this paper been published at the time it was written, several interesting discoveries of more recent explorers would have been anticipated.

Mr. Stevenson has kindly supplied us with the brief memoir of Mr. Adams which we now subjoin:—

"The late Mr. Edward Adams.

"The following particulars of the brief but eventful career of the talented author of this paper are gathered from a memoir which appeared in the 'Bury and Norwich Post' for December 17, 1856; Mr. Adams's death having occurred at Sierra Leone on the 12th of November of that year, at the early age of 32.

"The paper itself, found among other MSS. and drawings, was recently brought under the notice of Mr. Stevenson by Mr. William Adams, a brother of the deceased, now residing in Norwich.

"Mr. Edward Adams was born at Great Barton, near Bury St. Edmunds, Suffolk, on the 24th of February, 1824, and was educated for the medical profession, passing the usual examinations with honour and credit. Ardently fond of natural history, he devoted his leisure hours to its study; and his talents in this respect had an important bearing upon his subsequent appointments.

"In 1847 he obtained a commission in the Navy as Assistant-Surgeon, and was at once appointed to Haslar Hospital, and afterwards to the Naval Hospital at Devonport; but as soon as the expedition in search of Franklin was determined upon in the winter of 1847–48, under Sir James Ross, Mr. Adams volunteered both as Assistant-Surgeon and Naturalist, and sailed for the Arctic seas in the 'Investigator' (Captain Maclure) on the 8th of May, 1848. This search proved a fruitless one; and in eighteen months' time he returned in his ship to England, in November 1849. His time, however, had not been spent unprofitably, as his collections in ornithology and geology, as well as his beautiful drawings of places of interest visited, fully testified, and for which he received the thanks of the Hydrographer of the Navy, Admiral Beaufort. Within barely three months of his landing in England we again find Adams, in January 1850, on his way to the Polar regions, and on this occasion as Assistant-Surgeon and Naturalist on board the 'Enterprise,' in the expedition under Collinson and Maclure, once more fitted out in search of Franklin, by way of Behring's Straits. The two ships forming the expedition parted company in the Straits; and after the discovery of the North-west Passage by Maclure, the 'Enterprise' put back, and wintering in China, again entered the ice in the following year. In October 1850 Mr. Adams was sent with Lieut. Barnard to Michalaski Redoubt, Norton Sound, and thence, in search of the missing expedition, overland to Darabin, the northernmost part of the Koupac river, with a party of the ship's crew and natives, and only escaped, by taking a different route, being murdered, as poor Barnard and the Russian commander at the fort were, by hostile Indians. Having rejoined his ship in June 1851, he accompanied it for the remainder of the voyage, spending four years in those dreary regions, and, in pursuit of his favourite study, formed a considerable collection of birds and drawings, most of which are stated to be deposited in the British Museum, whilst others were presented to his ornithological friends, particularly to Mr. John Gould and the late Mr. G. R. Gray*. The 'Enterprise' reached England in May 1855; but during her stay in China on her way home, the hot climate greatly affected Mr. Adams, and a severe attack of inflammation of the lungs nearly cost him his life. After two months' entire rest he next prepared himself to pass his examination as full Surgeon, and being duly gazetted to that rank, was appointed to the steam-sloop 'Hecla,' and joined that vessel at Devonport in November 1855. In May 1856 she was ordered to the west coast of Africa; and though with a presentiment in his own mind that his health would not stand the climate, Mr. Adams did not shrink from his duty. His fears, however, were but too well grounded. Scarcely a month after the 'Hecla's' arrival at Sierra Leone he was compelled to be invalided on shore whilst the ship made a cruise of three weeks; but on her return to that port he was found so much worse that he was again conveyed on board, with a view to his immediate return to England. This, however, was not to be! Only a day or two later an attack of typhus proved rapidly fatal in his already emaciated condition; and the remains of this able medical officer and accomplished naturalist were interred in the cemetery at Sierra Leone, with military honours, the Governor and the whole garrison attending."—EDD.]

BLUE-THROATED WARBLER. *Cyanecula suecica* (Linn.).
Soo-kuk, Eski.

On the 5th of June I met with seven of these birds near the redoubt, feeding about some willow-bushes. They were very wild, and it was with some difficulty that I procured a specimen.

I could not find them afterwards; and the natives were evidently not well acquainted with them.

[We have not been able to trace Dr. Adams's specimen, which is greatly to be regretted, as no other instance of a bird of this genus having been found on the American continent is on record.]

[* Mr. Gray dedicated *Colymbus adamsi* (P. Z. S. 1859, p. 167, to the commemoration of Mr. Adams's labours in ornithology.—EDD.]

BLACK-CAP TITMOUSE. *Parus atricapillus,* Linn.
Chik-a-ki-perc, Eski.
[*Parus atricapillus,* Dall & Bann. p. 280.]

A few Black-cap Tits were to be seen all the winter about the patches of dwarf birch and willow on the hill-sides. I could not learn that they breed here, nor did I see any during the summer; but they probably remain all the year.

THE YELLOW WAGTAIL. *Motacilla flava,* Linn.
[*Budytes flava,* Dall & Bann. p. 277; Baird, *tom. cit.* p. 312.]

This beautiful bird makes its appearance in the beginning of June, and very soon commences to build. I found a few on the 5th of June, which were feeding about the tops of some willow-bushes, and in the marsh near them. On the 12th I found the first nest; it was placed amongst the grass on the steep bank of a ravine, in a small hollow, so that the nest was completely embedded in earth. It was lined with bents and hair. It contained six eggs, of a pale brownish white colour, rather darker at the large end, where there were a few faint streaks of brown. I afterwards found other nests placed in similar situations.

AMERICAN BARN-SWALLOW. *Hirundo americana,* Wilson.
Jo-lu-kar-nár-uk, Eski.
[*Hirundo horreorum,* Barton; Dall & Bann. p. 279.]

Early on the morning of the 31st of May, 1851, eight or ten of these birds arrived at Michalaski. I had been wandering about the neighbourhood the whole of the previous day, and did not meet with one of them; so that they must have journeyed in a flock. They immediately set to work about repairing their old nests, which were placed in an old outhouse, under the eaves of the buildings, and in some of the loopholes for musketry in the block-houses. When they find a horizontal surface on which to build, the nest is always very slight and shallow; but those under the eaves are large and well built, very much resembling those of *Hirundo urbica,* but open at the top. There were so many old nests that very few of them built new ones, merely repairing and relining the old ones. The nest is built entirely of mud, and lined with a thick bed of feathers. One pair that had been frequently disturbed whilst building in an exposed situation, left their unfinished nest and built another in the root of a tuft of long grass which hung down from the inside of the roof of an outhouse. This one they concealed so artfully, by suspending long straws from its outer surface, that it was only by watching the birds that I discovered it. At the time of the arrival of these birds the weather was fine and warm, and their numbers were soon greatly increased; but in a few days the weather became cold and wet, and all the Swallows left off building. One pair left their half-finished nest in an outhouse, and built upon a rafter close by it a large loose nest of straw and feathers, well lined with the latter (there was no mud), and partly arched over with straw. In this nest the two birds used to sit, side by side, the whole day long. As soon as the warm weather returned they left their warm retreat, and I never saw them use it afterwards. It was evidently built merely as a temporary resort during the cold weather; and it was the only one I saw; the other birds sat huddled together upon the rafters.

The eggs vary very much in size and shape, as well as in the colour and disposition of the spots. The measurements vary from 8½ to 10 lines in length; but the breadth is generally about 6½ lines. The spots are sometimes small and partly blotched, sometimes distinct, and sometimes much larger at the large end, around which they occasionally form a ring. Some eggs are spotted with dark brown, some with reddish brown, and others with yellowish brown; and these varieties often occur in the same nest.

The favourite place for building was under the eaves of two outhouses which were only a few feet apart, and the most noisy place in the redoubt—the constant resort of women, children, and dogs. They often build in old deserted native huts; and at Port Clarence, in lat. 65° 20′ N., the furthest north that they appear to go, they were breeding in a cliff at some little distance from the sea.

Most of the nests had eggs in on the 19th of June, when my observations on them ended. They are said by the Russians not to leave until the middle of September.

White-throated Finch. *Fringilla pennsylvanica*, Lath.
Me-chŏ́k-chok-pí-e-nuk, Eski.

[*Zonotrichia albicollis* (Gm.) is the name to which the above synonym is applicable. The species, however, is very probably the western form *Z. gambeli*, which, according to Dall and Bannister (p. 284), is found on St. Michael's Island.]

A few of these birds arrived in the middle of May with the Lapland Buntings. They frequented the dry hillocks about the edges of the marshes, and are said to breed there; but I did not succeed in finding a nest.

Lesser Redpole. *Linaria minor* (Gould).
Oke-wee-tár, Eski.

[*Ægiothus linaria*, Dall & Bann. p. 281.]

Small flocks of this bird arrived with the Snow-Bunting in October, and remained until the end of January, when they suddenly disappeared.

Lapland Bunting. *Plectrophanes lapponica* (Gould).
Pig-git-tig-wuk, Eski.

[*Plectrophanes lapponica*, Dall & Bann. p. 283.]

Multitudes of these birds arrive in the middle of May, and occupy the whole extent of the marshes. Their pleasing song and sprightly manners make them universal favourites, and here, at least, they are never disturbed. Their song is short but lively, and is often uttered as they rise to a small height in the air and descend. They reminded one very much of the Tit-Lark. The nest is generally placed upon a little hillock in the marsh, sometimes touching the water; it is neatly woven with bents and hair, and lined with feathers. They lay five or six eggs, mottled with light olive-brown and dirty yellowish white, with streaks and a few spots of dark brown about the larger end. I found the first nest with eggs on the 1st of June.

They appear to feed principally on the seeds of the different grasses which abound in the marshes. I also found a few insects in some of their stomachs.

THE SNOW-BUNTING. *Plectrophanes nivalis* (Gould).

E-már-o-slik, Eski.

[*Plectrophanes nivalis,* Dall & Bann. p. 282.]

In the beginning of October these birds arrived in flocks, which remain, feeding upon the grass-seeds on the hills, until the middle of January. After this time only a few scattered individuals are met with; and by March they are all gone, exept a very few that remain to breed on the tops of the highest hills.

RAVEN. *Corvus corax.*

Jo-lú-kok, Eski.

[*Corvus carnivorus,* Dall & Bann. p. 285.]

Two or three Ravens are to be seen about every native village all the year, where they dispute with the dogs for scraps of fish and meat. In the autumn they pilfer vast quantities of fish from the stages near the fishing-grounds, and occasionally surprise a mouse or small bird. In winter they roost during night in the sea-cliffs, generally selecting a well-sheltered nook, to which they return every evening.

They breed also in the cliffs; and in June I saw three full-fledged young, which had been procured there shortly before. Two of these were black; but the other was an albino. It was of a very light stone-colour, with white beak, legs, and claws; the shafts of the quill-feathers white; iris blue. The natives told me they had seen one some years before. They were keeping this as a pet.

WHISKEY JACK. *Garrulus canadensis.*

Kobárno, Eski.

[*Perisoreus canadensis,* Dall & Bann. p. 286.]

This bird is not found in the immediate neighbourhood of Michalaski; but thirty miles to the northward the volcanic rock gives place to sandstone, and here the dwarf bushes attain the height of thirty feet, many of the birches increase to trees, and the white spruce first makes its appearance. This is the favourite country of this bird; and wherever a native hut has been erected in the woods he makes his appearance, in company with the Black-cap Tit. Three or four are to be seen about every hut, where they pick up scraps of meat and fish from the stages. They are very tame and fearless, approaching either man or dog with the greatest confidence.

The short unpretending cry of this bird, and more noisy twittering of the Tit, are the only sounds that break the dreary silence of the woods in winter. The Three-toed Woodpecker (*Picus tridactylus*) also inhabits this district throughout the winter.

SHORT-EARED OWL. *Otus brachyotus.*
Muug-ar-ko-jee-wuk, Eski.
[*Brachyotus cassini,* Dall & Bann. p. 273.]

This bird arrived in the middle of May, and was frequently met with during the following month, in pairs and scattered individuals, about the marshes, where they were preying upon the small *Tringæ* and Lapland Buntings.

HARRIER. *Circus* —— ?
Chik-kár-be-ah, Eski.
[Doubtless *C. hudsonicus,* see Dall & Bann. p. 272.]

Several mutilated specimens of a small Hawk were met with amongst the natives, and which, from the length of the tarsus, and the ruffled feathers around the head, were evidently of this genus.

They do not breed in this neighbourhood, but arrive in some numbers in the month of August, when they are often caught in a noose set upon the top of a post. They are not seen here in spring.

THE ROUGH-LEGGED BUZZARD. *Buteo lagopus.*
Puttoóuk, Eski. of Norton Island.
[*Archibuteo lagopus,* Dall & Bann. p. 272.]

One specimen only of this bird occurred, which was killed by a native whilst preying upon the carcass of a deer. They are said to be rarely met with, and in the autumn only.

SNOW-GOOSE. *Anser hyperboreus.*
Hung-oók, Eski.
[*Anser hyperboreus,* Dall & Bann. p. 274.]

The first of the Snow-Geese arrived on the 9th of May ;

and during the two following days they were passing over in large flocks of from 100 to 300. Immense numbers passed over on these two days; and after that only a few stragglers were to be seen. The flocks followed one another quickly, and as soon as one large flock had gone another was seen advancing. The natives, as well as the Russians, told me that they pass over every year in this manner, and again return at the end of September, and at each season are only seen for three days (except a few stragglers). But the singular thing is that in the spring their flight is directed towards the south, and in the autumn to the north. The coast at this part of the Sound runs nearly north and south; and in the spring migration the Geese come from the north and cut across the marshy land to the south of Michalaski, and then proceed down the coast. I have no doubt of the truth of the report, as I got the same tale from all, and saw them myself in the spring; but the cause I could not discover, and can only imagine it to be a slight deviation from their direct northerly course, caused by the conformation of the land. None of the other Geese are seen in such numbers as these, nor are they so regular in their flight. The Snow-Geese generally pass over at a considerable height, and seldom alight except at night; but the stragglers generally fly low, and are easily shot. Every bird seemed to be in full plumage, and in good condition. None of them remain to breed.

The Russians complained that there were very few Geese this year: one man shot eighteen one night, which was the only case of a large number being taken; but they say they often get twenty or thirty in a single night in other years.

White-fronted Goose. *Anser albifrons.*

Luk-luk, Eski.

[Probably *A. gambeli* of Dall & Bannister's paper (p. 294.)]

A few of these birds arrived as early as the 23rd of April; but it was not until the first week in May that they became numerous. They do not congregate in such large flocks as most of the other Geese, and are more often met with singly or in small parties. A few remained to breed in company with the Brent Geese; but by far the greater number went further north.

White-headed Goose. *Anser* —— ?
Nud-jár-lik, Eski.
[Probably *Chloephaga canagica* of Dall & Bannister's paper (p. 296.)]

This bird, of which I can find no notice, I first met with at Port Clarence, and I mistook it for a young Snow-Goose. An old hunter at Michalaski, in enumerating the birds to me, told me of a Goose with a white head and a blue body. I thought it might be the Bernicle; but then it had a yellow bill, and I was puzzled. He said that very few came, but generally some every year, and that they were excellent eating. On the 16th of May I came suddenly upon a flock of eight of them—their white heads conspicuous. I could not get within less than 200 yards without showing myself; so I took out my glass to examine them at my leisure: they were standing just in the water at the edge of a lake, preening their feathers. They appeared to be about the size of *Anser albifrons,* but of a stouter and heavier build; the head and about two inches of the neck perfectly white; the back and wing-coverts greyish blue, with broad bars of black and narrow ones of white; the lower part of the neck of the same colour; belly and breast light dirty grey, darker on the flanks; quills and tail black, or nearly so; feet and bill pale reddish orange. They reminded me much of the *Anser leucopsis* (Flem.); but they were larger, had more white, and no black on the neck, and their bills and legs were red instead of black. When I had well examined them, I endeavoured to get within shot of them; but they rose and I saw no more of them. The bird is well known to the natives; and their name for it is derived from the word "Nud-jár-huk," a cap.

Brent Goose. *Anser bernicla.*
Luk-loó-nuk, Eski.
[*Bernicla nigricans,* Dall & Bann. p. 295.]

Vast numbers of these birds arrive in the middle of May, in large flocks. The first I noticed on the 12th. They keep much more to the sea than the other Geese; and a large flock is seldom seen inland, except at the breeding-places. They keep along the coast, generally out of shot; and their line of flight is directly north (in the spring).

They breed in the southern marshes with the Bernicle. The natives collect the eggs there, and bring boat-loads of them to Michalaski at the end of June. Although in good condition, they were rank and fishy, and by no means good eating. The Russians think them the best, as they do the fishy Sea-Ducks.

HUTCHINS'S BERNICLE GOOSE. *Anser hutchinsii.*
Muh-lár-nuk, Eski.
[*Anser hutchinsii,* Dall & Bann. p. 295.]

Arrived on the 8th of May; and a considerable number remained to breed in the marshes. They came in small flocks, and by twos and threes. They were in good condition, but varied very much in weight. One shot on the 16th weighed rather less than three pounds, others nearly six pounds. In the immediate vicinity of Michalaski they were by no means numerous, the greater number remaining in the marshes about thirty miles to the south.

THE TRUMPETER SWAN. *Cygnus buccinator.*
Cóg-a-zook, Eski.
[*Cygnus buccinator,* Dall & Bann. p. 294.]

This was the only species of Swan I met with at Michalaski. The first appeared on the 30th of May; but they were at no time numerous, from two to eight or ten keeping together. A few of them are said to breed here; but most of them go further north.

MALLARD. *Anas boschas.*
Yu-gók-puk, Eski.
[*Anas boschas,* Dall & Bann. p. 296.]

A few straggling pairs made their way here on the 3rd of May. A few of them breed here. They frequented the marshes on the river-banks and the lakes. They are said not to come every year, but that generally a few are met with.

American Teal. *Anas crecca,* var. (Forster).
Ting-a-zo-me-ók, Eski.
[*Nettion carolinensis,* Dall & Bann. p. 297.]

They were not numerous about Michalaski; but a few pairs were generally to be found about the most grassy of the lakes, where they were constantly playing about, ducking their heads, and catching insects from the surface of the water. They are late in their arrival; I met with none until the 20th of May; but they remained to breed.

Pintail Duck. *Anas acuta.*
Nah-ling-eív-e-nuk, Eski.
[*Dafila acuta,* Dall & Bann. p. 297.]

These were the first of the Ducks to arrive (April 28th), and the only freshwater ones that were numerous. They frequented all parts of the marshes, but not in large flocks, seldom more than three or four being seen together. They were generally very wary; and it was only by secreting myself in their lines of flight that I could get shots at them.

Their nests were placed in rough grass about the marshes, and carefully concealed, the eggs of a very pale green, almost white, and eight or nine in number.

They appear to become much attached to a place when they have once fixed upon it for their breeding-quarters. There was a small lake and spot of marsh close to Michalaski where two pairs of these birds had located themselves. It also happened that I was very often there for hours at a time. When I made my appearance the birds always rose from the lake, and never came within shot of me; but they would not leave the place, and ultimately built their nest within a few feet of the lake. The natives use the long tail-feathers of this bird, as well as those of the Tern and Long-tailed Duck, to ornament the wooden shades which they wear over their eyes in summer.

American Widgeon. *Anas americana* (Wilson).
Ting-a-zó-me-ár, Eski.
[*Mareca americana,* Dall & Bann. p. 298.]

The Widgeon did not arrive till the 12th of May; afterwards a considerable number were always to be met with about the inland marshes. They seem to live very much upon insects, which they capture upon the water and about the rushes.

The small inland lakes were their principal places of resort; and their nests were generally upon the grassy banks. The eggs are small, much elongated, and slightly larger at one end. Their colour is very pale sea-green.

SHOVELLER. *Anas clypeata.*

Yu-gók-puk, Eski.

[*Spatula clypeata,* Dall & Bann. p. 297.]

I only met with a single pair of Shovellers; and none were killed by the Russians. The natives confounded it with the Mallard; and nobody knows any thing of it; so that it is probably very rare. It is the only bird with which I found the natives unacquainted.

AMERICAN SCAUP. *Fuligula mariloides.*

[Probably *Fulix affinis* of Dall & Bannister's paper (p. 298.)]

The first of these birds I shot on the 12th of May. They were not numerous; nor did I ever observe them about the lakes. When about the marshes shooting I sometimes met with one or two flying about; but all were males. Four specimens which I procured agreed in being much darker on the back than *Fuligula marila*; and instead of pure white the belly was of a dirty greyish colour. In size they agreed with the measurements given in the 'Fauna Boreali-Americana,' except that they were longer in the tarsus.

AMERICAN SCOTER. *Œdemia americana* (Swains.).

Too-tár-lik, Eski.

[*Œdemia americana,* Dall & Bann. p. 300.]

These birds were rather late in their arrival; I met with none until the 19th of May. Towards the end of the month several pairs had taken possession of the larger lakes near Michalaski; here they remained to breed, seldom going out to sea, but keeping together in small flocks in the middle of the lake. Their nests were well secreted in the clefts and hollows about the steep banks of the lakes, close to the water;

they were built of coarse grass, and well lined with feathers and down. They had not laid when I last examined the nests.

Long-tailed Duck. *Harelda glacialis.*

Ad-le-guk-lú-luk, Eski.

[*Harelda glacialis,* Dall & Bann. p. 298.]

First appeared on the 7th of May, when scarcely any of them had completed their spring moult—white feathers about the head and scapulars yet remaining. They were by no means numerous, and generally only in pairs. They bred about the inland marshes. The nest is like that of other Sea-Ducks. The eggs, six to nine in number, were very long, measuring 2 in. 3 lin. by 1 in. 5 lin. Colour rather dark olive-green. One of my specimens had the red patch remaining on the bill.

Blue-eyed Duck.

Ong-óo, Eski.

[*Lampronetta fischeri,* Brandt; Gray, P. Z. S. 1855, p. 212, pl. 108; Dall & Bann. p. 299.]

Three young birds (which I have called as above, for the sake of distinction) were shot out of a flock on the 28th of May. One only was a male, immature, and too much shattered by the shot to be worth preserving, as I expected to get more; however, I saved the head and neck. The whole plumage was of rather a light-brown colour, with white streaks beginning to appear on the scapulars, which were long, but only slightly curved; the feathers on the occiput and nape elongated, and those around the eye radiating from it, and apparently assuming a greyish metallic colour; quills and tail-feathers dark greyish brown; bill wine-yellow, shading into horn-colour at the tip, nail horn-colour; legs and toes dirty yellow; webs dusky, resembling those of the King Eider (*Somateria spectabilis*); bill broad and depressed, pitted near the nail, compressed just before the edge of the bill joins the nail, nail of moderate size; frontal feathers encroaching upon the bill as far as the front of the nostrils, and ending in a semicircular projection; line of the feathers sloping from this, behind the nostrils, to the rictus; no appearance of lobes: feet as in *Somateria spectabilis*; iris sky-blue.

The measurements of the male were as follows:—Expanse of wing 34″; total length 20″ 8‴; bill above 11‴, bill to rictus 2″ 3‴; tarsus 1″ 10‴, middle toe and nail 2″ 9‴, hind toe and nail 11‴; tail 2″ 9‴; wing 9″ 6‴.

BLACK-THROATED EIDER DUCK. *Somateria* —— ?

Mit-hok, Eski.

[*Somateria v-nigrum,* G. R. Gray, P. Z. S. 1855, p. 211, pl. 107; Dall & Bann. p. 300.]

The first of these birds I met with on the 10th of May; and soon after they became pretty numerous. They frequented all the marshes, but were generally flying about; they seldom alighted on a lake, coming straight in from the sea, generally along the river-course; they took a few turns about the marshes, and again went out to sea. They soon fixed upon their breeding-places; and their nests were scattered over the whole of the marshes. One nest was within thirty yards of the fort, in the midst of children and dogs; the old one built her nest and laid four eggs before she was discovered. Yet they are very wary and difficult to approach. On the wing they fly in a straight line, and appear stupid, often flying within a few yards of the shooter. They are very swift on the wing, and carry off a great quantity of shot.

One pair, which I watched very particularly, built their nest in a swampy hollow between two small lakes, about twenty yards from one of them. It was placed in the midst of tall gass, and built of rushes and grass, and well lined with feathers and down. By the latter end of the month they had laid six eggs; and the female then began to sit.

The male assisted in building the nest, but not in the process of incubation. Whilst building they worked only very early in the morning; but when the female began to lay, both of them came in from seaward a little before noon, and after a few turns round, to see that all was right, both of them alighted in the lake. Here they remained some little time, and then the female walked off to her nest; and very soon after the male went out to sea. In about an hour he came back to the lake; and his mate then joined him; but I never saw her leave the nest until she heard him cooing on the lake. They remained a short time on the lake playing about and cooing, and then again went out to sea, and did not return until the next day. When the old one began to sit the male came in every day and took her out to sea, and again accompanied her back to the lake; but I never saw him approach the nest. I left Michalaski before the eggs were hatched.

Their principal food here is mussels and other small shellfish, for which they dive in from three to six fathoms of water. One day I counted from the fort 206 of them feeding along a tide-line in the bay; out of the whole number four only were females. Their note very much resembles the cooing of the Wood-Pigeon often repeated.

In the general colour of the plumage the male resembles the common Eider (*Somateria mollissima*), except about the head, where the white of the cheeks shades gradually into the green which separates it from the black of the upper part of the head. The white line running backwards from the eye is wanting; but that separating the green feathers on the nape is present. It has a V-shaped black mark under the throat, similar to that of *Somateria spectabilis*; but the fork extends further backwards. The bill is orange at the base, and shading into gamboge-yellow at the margin, which is of a yellowish horn-colour. The legs are dirty yellow, with a shade of orange, the webs dusky. The female very much resembles the female of the King Duck; but the spots and blotches about the back and scapulars are larger; the bill is dark greenish olive, horn-coloured nail; legs and toes dusky dirty-looking yellow, with dusky webs; iris brown in both.

In form it differs much from the common Eider. The head is larger and more clumsy, and has the the supra-orbital glands more developed, and forming a prominent swelling over the eyes. The bill is wider and more elevated at the base; and the frontal processes end in very sharp points instead of the rounded ones of the common Eider. The neck is shorter and thicker, and the body larger and stouter. Altogether it has a heavier and more clumsy appearance than *Somateria mollissima.*

The eggs, generally six or seven in number, are of a pale sea-green colour, with a tinge of olive.

They seldom weigh less than four pounds, but sometimes six pounds.

RED-BREASTED MERGANSER. *Mergus serrator.*

Pi-gék, Eski.

[*Mergus serrator,* Dall & Bann. p. 301.]

Only a few of these birds visited Michalaski, and did not remain to breed. A female was shot on the 24th of May; and on the 14th of June I shot a fine male out of a flock. On the same day I saw two other flocks; they were all flying northwards along the line of the sea-beach. According to the natives they are only met with occasionally in scattered flocks.

WILLOW-GROUSE. *Tetrao saliceti* (Swains.).

Ar-ko-zik-ook (winter plumage), *Ko-park-tok* (summer plumage), Eski.

[*Lagopus albus,* Dall & Bann. p. 287.]

This is the only Grouse found in the vicinity of Michalaski. It is met with in small and scattered packs about the hills in winter, until about the end of February, when several of the packs join and form one large one.

The first change of plumage I noticed was on the 3rd of May; it was a male bird, and had the greater part of the head and neck coloured.

They seem to breed principally about the numerous dry hills in the marshes. The eggs vary very much in colour. The ground is a pale stone-colour, and spotted and blotched with shades of brown, from a dark red-brown (almost a black) to a light yellowish brown.

The natives catch them in large numbers in the winter, by setting snares round a few bushes, amongst which they scatter berries. In summer they use a draw-net, 30 feet long by 15 inches high. This is placed on the brow of a hill where a bird has been seen, and a stuffed bird placed near it, in a fighting attitude. A woman then secretes herself, and imitates the call, which is almost immediately answered; presently the bird makes its appearance, and alights by the side of his fancied opponent, drops his wings, spreads his tail, and struts round and round, until by one unlucky step he finds himself in the midst of the net. In this way native women take numbers whilst hunting about the marshes for eggs.

BROWN CRANE. *Grus canadensis.*

Túds-le-uk, Eski.

[*Grus canadensis,* Dall & Bann. p. 289.]

Several Cranes arrived with the earliest of the Geese in the beginning of May; and by the middle of the month the whole of the marshes were alive with them, and their noisy croakings were to be heard in every direction, especially about the extensive marshes on each side of the river. They had eggs before the end of the month. Their nests were placed about the dry knolls in the marshes. Their eggs have a brownish white ground, and are spotted with shades of brown and reddish grey. The spots are large, and principally about the large end, where they form an indistinct ring.

GOLDEN PLOVER. *Charadrius pluvialis?*

Too-zé-ek, Eski.

[*Charadrius virginicus,* Borkh.; Dall & Bann. p. 289.]

This bird appears to be distinct from the European species. It is smaller, has more naked thigh, and the axillary plume is ash-coloured, agreeing well with Mr. Yarrell's remarks. A few pairs arrived about the end of May. They appear to be very particular about the places they frequent. I found them only in two small detached pieces of marsh, about the wettest part of which they were feeding. They seemed to be breeding upon some dry spots near by; but I could not discover a nest.

TURNSTONE. *Strepsilas interpres.*

Chó-o-muk, Eski.

[Probably *S. melanocephala,* which, according to Dall and Bannister (p. 290), is common in St. Michael's.]

A few Turnstones made their appearance, in pairs, on the 31st of May. They frequented the salt marsh before mentioned, where I often found them sitting upon some logs of drift wood that overhung the water. They fed about the mud upon insects, worms, &c.; but I never saw them on the sea-shore, nor in company with other birds.

Red-necked Phalarope. *Phalaropus hyperboreus.*
Cher-pók-lo-ok, Eski.
[*Lobipes hyperboreus,* Dall & Bann. p. 290.]

In the beginning of June a very few of these birds were to be met with in the pools about the salt marsh; they were generally in the water, swimming about and picking the flies from the surface. I saw none of them at sea, and only one or two pairs in perfectly fresh water.

Grey Phalarope. *Phalaropus lobatus.*
I-im′-e-nuk, Eski.
[*Phalaropus fulicarius,* Dall & Bann. p. 291.]

Arrived on the 7th of June. Some of them kept to the sea-shore, often swimming out to sea; but the majority frequented the salt-water marsh, keeping together in small flocks of six or eight. They have not the elegant movements of the other species, and were more often searching the mud with the Sandpipers. The natives told me that both the species breed there; but I did not find their nests.

Brown Snipe. *Macrorhamphus griseus.*
Ki-o-kók-ar, Tál-ik, Eski.
[*Macrorhamphus griseus,* Dall & Bann. p. 291.]

Arrived on the 20th of May, and soon spread themselves over the marshes, singly and in pairs; but the greater number of them frequented the salt marsh, where they fed about the mud in company with flocks of the Diminutive Sandpiper and Dunlin, which were the only birds I saw them associating with.

American Dunlin. *Tringa alpina.*
Cher-oó-me-nok, Eski.
[*Pelidna alpina,* var. *americana,* Dall & Bann. p. 291.]

A few of these birds frequented the salt marsh with flocks of the Diminutive Sandpiper. They built their nests on the higher ground surrounding the marsh. They were very often hovering over their nests and singing a low twittering song. The nest was merely a few dry leaves scraped into a slight hollow. The eggs, four in number, are spotted with large spots of three shades of brown upon a light olive-green ground; the spots principally collected about the larger end. The small ends were always placed together in the nest, as with all the Waders.

Diminutive Sandpiper. *Tringa pusilla.*

Lub-e-lub-e-lúk-uk, Cloo-me-ár, Eski.

[*Actodromus minutillus,* Dall & Bann. p. 292.]

The first of these birds I met with as early as the 14th of April, while the snow yet covered the greater part of the surface of the ground; but it was not till the beginning of the following month that they became numerous. They almost solely confined themselves to the salt marsh and the muddy banks of the river where it was under the influence of the tide; here they were always to be found in flocks of fifty or a hundred, accompanied by a few Dunlins and Brown Snipes. I often sat on a log whilst they were feeding all around within a foot of me; but on my making the slightest movement, they were gone with a whisk and a twitter in an instant. Their nests were placed in the same situations as those of the Dunlins. The eggs are spotted with shades of olive-green, principally about the large end, upon a pale brownish ground.

Hudsonian Godwit. *Limosa hudsonica.*

Pe-pé-pe-uk, Eski.

[*Limosa hudsonica,* Dall & Bann. p. 293.]

A few of these birds frequented the marshes on the riverbanks, to which they exclusively confined themselves, feeding upon the numerous worms. The first I met with were feeding in some shallow pools, on the 21st of May.

My specimens agree well with Sir J. Richardson's descriptions, except that the female had no rufous colour on the breast. The female is very considerably larger than the male. We found them afterwards at Port Clarence.

Arctic Tern. *Sterna arctica* (Gould).
Ter-kús-le-ko, T-uk, Eski.
[*Sterna macrura,* Naum.; Dall & Bann. p. 306.]

A few pairs of these birds arrived on the 16th of May, and bred near Michalaski about the elevated dry spots in the marshes: one or two nests were found singly; but the others were together upon a dry knoll.

I saw one day at this colony a bird of much smaller size; but I had not my gun, and I saw no more of them. The natives say that there are two of them, one larger than the other, but that they rarely see the smaller one.

Sabine's Gull. *Larus sabinii.*
Nud-júsh-ling-uk, Eski.
[*Xema sabinii,* Dall & Bann. p. 306.]

A few of these birds made their appearance about the marshes on the 7th of May; and a few pairs bred there. They were often feeding about the mud of the lakes; but I never saw them on the sea-shore. Their food consists of worms and insects. They are very bold, dashing at the head of any intruder upon their domain, like the Kittiwake; at other times they are rather shy and wary.

Kittiwake. *Larus tridactylus.*
Nor-o-yów-uk-chok, Eski.
[*Rissa tridactyla,* Dall & Bann. p. 305.]

This common bird made its appearance on the 6th of May; and some of them were always to be found about the marshes and on the sea-coast. They remained to breed in the marshes.

Glaucous Gull. *Larus glaucus.*
Kok-é-ze-buk, Eski.
[*Larus glaucus,* Dall & Bann. p. 304.]

These birds were among the first to arrive; several of them were seen about the edge of the ice on May 22nd. They breed in the cliffs of some small islands near Michalaski, and were constantly to be met with about the sea-beach and hunting about the marshes. The natives value them for their quills, as they use the back of the shaft to attach fishing-lines to the hooks.

BUFFON'S SKUA. *Lestris parasiticus.*
Yúnge-uk, Eski.
[*Stercorarius buffoni,* Dall & Bann. p. 304.]

Arrived on the 7th of May, after which some of these birds were always to be found near the stages for drying fish; here they seem to live, principally by plundering them. Some of them frequented the marshes, hunting about for eggs, and robbing the Terns and small Gulls. They bred about the dry knolls in the marshes.

NORTHERN DIVER. *Colymbus glacialis.*
Too-oó-slik, Eski.
[*Colymbus adamsi,* G. R. Gray, P. Z. S. 1859, p. 167; Dall & Bann. p. 308.]

The natives kill numbers of these birds at sea during the autumn. They have plenty of skins, both of old and young, which they convert into bags for their tools. I saw none of the birds myself; and the natives told me they did not arrive before the end of August.

BLACK-THROATED DIVER. *Colymbus arcticus.*
Tun-oó-slik, Eski.
[*Colymbus arcticus,* Dall & Bann. p. 307.]

A few of these handsome birds were always to be met with after the first week in June in the shallow bays along the coast, where they keep up a continual screaming throughout the day. They are said to breed here; but I got none of their eggs, nor did I ever see them about the marshes and lakes inland.

RED-THROATED DIVER. *Colymbus septentrionalis.*
Kok-ár-uk and *Kok-á-nok,* Eski.
[*Colymbus septentrionalis,* Dall & Bann. p. 307.]

The first of these birds arrived on the 21st of May; and soon afterwards most of the larger lakes had at least one pair of them as tenants. They seldom went out to sea, apparently only to feed, but were continually flying about the marshes, and diving and screaming upon the lakes. This species is a complete mocking bird, at least of harsh sounds; its cry often sounds like the squalling of a cat, the barking of a dog, the harsh laugh of a man, or the quacking of a duck, sometimes of all these united into one loud scream, as it dives into the lake in play.

Their nests were numerous, and generally placed quite close to the water on the banks of the lake; they consisted merely of a little loose grass pulled into a hollow; but some few were more carefully formed, though none of them were lined with feathers or down. The eggs, two in number, were of an olive-greenish colour, thinly spotted with dark brown; in some most of the spots were collected about the large end, in others not so.

Crested Auk. *Phaleris cristatella.*

Túb-e-uk, Eski.

[*Phaleris cristatella*, Dall & Bann. p. 309.]

Two of these birds were picked up at sea by a native on the 14th of June. They were weak and half starved, but with no marks of injury about them. I saw none except these; but they are occasionally met with by the natives at some distance from the shore. The Esquimaux about Kotzebue Sound and Port Clarence use the small orange-coloured plates at the base of the bill for ornamenting their waterproof frocks; and, from the great number attached to one frock, there must be extensive breeding-places somewhere in that vicinity.

The time of observation on these birds extended from October 1850 to the end of June 1851, at which time most of the birds had eggs nearly ready for hatching; but no young birds had appeared. The above list includes every bird, I believe, that visited the immediate vicinity of Michalaski during that period.

XXXIV.—*Note on the Type of* Malaconotus leucotis, *Swainson.* By Osbert Salvin, M.A., F.R.S., &c.

(Plate XI.)

A few weeks ago Mr. R. B. Sharpe wrote to me asking if the type of *Malaconotus leucotis* of Swainson was still extant in the Cambridge Museum, and requesting me, if so, to examine the specimen with a view to ascertaining the validity of the species. Not finding any bird so named along with the other specimens of Swainsonian *Malaconoti,* I carefully read the description (An. in Menag. p. 341. no. 180); and it at once occurred to me that the bird was no *Malaconotus* at all, but a member of the American genus *Vireolanius.* With this clue I turned to *Vireolanius,* and there found a Swainsonian specimen answering to the description so accurately that, in spite of the loss of the original label, I had no doubt whatever that the type of *M. leucotis* was before me.

Looking further into the matter, it became evident that *M. leucotis* was identical with the bird long afterwards described by Bonaparte as *Vireolanius icterophrys;* and thus a change in the recognized synonymy of this species becomes necessary.

In the 'Nomenclator Avium Neotropicalium' (p. 16) Mr. Sclater and I enumerated the five species of *Vireolanius* with which we were acquainted, being those recognized by Prof. Baird in his 'Review of American Birds.' Putting aside *V. melitophrys,* which is very distinct from all the rest in coloration, we have four species of *Vireolanius,* the prevailing colour of which is green. Of these the two more northern species, *V. pulchellus* and *V. eximius,* have the sides of the head green, and a blue tinge on the feathers of the top of the head. The latter is readily distinguishable from the former by its yellow superciliary stripe. The two more southern species, *V. leucotis* and *V. chlorogaster,* have the sides and top of the head grey. Besides a common yellow superciliary line, *V. leucotis* has a white streak on either cheek, which, running from under the eye, includes the lower portion of the ear-coverts. The lower surface of the body in *V. leucotis* is of a much clearer yellow than in *V. chlorogaster.*

About the time that my attention was first called to this subject, Mr. Buckley sent us two beautiful skins of *V. leucotis* from Sarayacu, in Ecuador. From one of these the accompanying plate has been prepared, as the Swainsonian specimen is in hardly a fit state for being figured, the plumage being abraded, as well as faded from exposure. Moreover the origin of Swainson's specimen is quite unknown, the species having been doubtfully set down by Swainson as an inhabitant of Africa, probably from a general resemblance in colour the bird bears to some members of the truly African genus *Laniarius*.

The geographical ranges attributed to *V. leucotis* and *V. chlorogaster* are hardly satisfactory. Bonaparte stated that the former was from the Rio Negro; to the latter he gave the vague habitat South America*.

"The head of the Huallaga, East Peru, and Cayenne," are the habitats Prof. Baird gives to *V. leucotis*; and of this species, as already stated, we have recently received specimens from Sarayacu, in Ecuador. Eastern Peru is set down in Mr. Sclater's 'Catalogue of American Birds' as the origin of his specimen of *V. chlorogaster*; and this statement is followed by Prof. Baird in his 'Review,' on the evidence of the same skin. The skin in question (which is marked "S. America," *Verreaux*) has all the appearance of a Cayenne skin, the legs being tied together and the specimen shaped in the form well known as peculiar to the preparations from that country. If this surmise be correct, as I believe it to be, and if the Cayenne origin of one of the specimens of *V. leucotis* examined by Prof. Baird be, as seems very probable, incorrect, we have the distribution of these two species as follows:—

V. chlorogaster. Peculiar to Cayenne.

V. leucotis. Ranging from the Rio Negro to Ecuador and the upper waters of the Huallaga.

This account of the ranges of these nearly allied species seems to be more probably correct than that which has been hitherto advanced.

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* In the register of the British Museum, where this type exists, it is recorded as having come from Cayenne.

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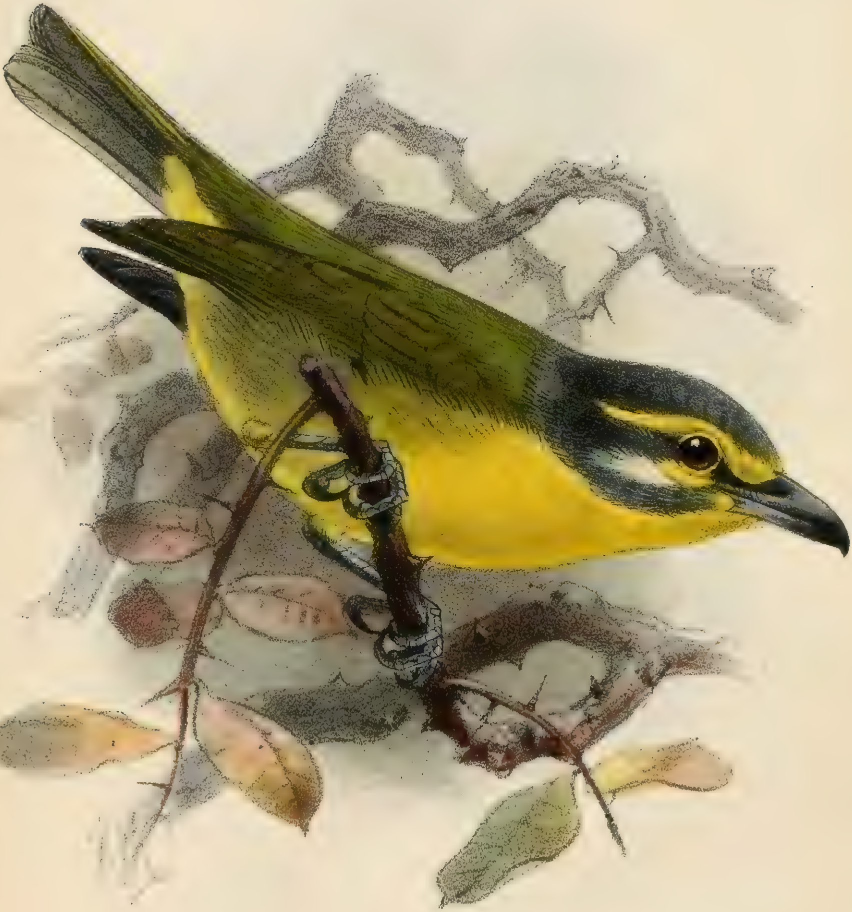

J.G.Keulemans lith

Hanhart imp

VIREOLANIUS LEUCOTIS.

In the 'Hand-list of Birds' (i. p. 382), G. R. Gray quotes under *V. chlorogaster* a synonym *V. dubusi*, Verr. I have been unable to find any published description of the bird under this name. I find, however, with Mr. Sharpe's assistance, that, besides the type of *V. chlorogaster*, there is a second specimen in the British Museum, which was acquired (apparently from Verreaux, through Cuming) in 1858, and which is called in the register *V. dubusi*. With it the Museum obtained, amongst other birds, *Monarcha castaneiventris*, described by Verreaux in the 'Revue de Zoologie' in 1858 (p. 304). As no description of *V. dubusi* appears in the same paper, it seems more than probable that it never was so described at all. This name, in fact, is doubtless one of the many which Gray copied from the bottom of a stand, or from a label, and incorporated into his 'Hand-list' to perplex us all in our searches for their origin Of the same nature, perhaps, is a synonym of *V. icterophrys*, quoted in the 'Hand-list' a few lines lower down, and fathered upon Mr. Sclater and myself, except that in this case an evident *lapsus calami* was most probably perpetrated by Gray's own pen!

Lastly, it remains to give the altered synonymy of *V. leucotis*, which runs thus:—

VIREOLANIUS LEUCOTIS. (Plate XI.)

Malaconotus leucotis, Sw. An. in Menag. p. 341 (1838).

Vireolanius icterophrys, Bp. Compt. Rend. xxxviii. p. 380, et Not. Orn. p. 60 (1854); Baird, Rev. Am. B. p. 399; Scl. & Salv. Ex. Orn. p. 16; Nomencl. p. 16.

Mus. Acad. Cantabr. et S. & G.

XXXV.—*Descriptions of two new Species of Birds from Central America, and one from South America.* By OSBERT SALVIN, M.A., F.R.S., &c.

WHEN Mr. Sclater and I, in 1868, last revised the genus *Pyrgisoma* (Ex. Orn. p. 128), we considered that Guatemalan and Costa-Rican specimens, there called *P. leucote* (Cab.), belonged to one and the same species. The accession of a number of specimens from both countries has convinced me that the Guatemalan bird is capable of being easily distinguished from the Costa-Rican one. I therefore characterize the first of the species referred to in this paper as

PYRGISOMA OCCIPITALE, sp. n.

Chamæospiza torquata, Scl. & Salv. Ibis, 1860, p. 274 (nec Du Bus).

Pyrgisoma leucote, Salv. Ibis. 1866, p. 205 (nec Cab.); Scl. & Salv. P. Z. S. 1868, p. 326, et Ex. Orn. p. 128, pl. lxiv. f. 2 (nec Cab.).

Affine *P. leucoti,* sed pileo cinereo nec nigro, superciliis distinctis flavis et macula pectorali minuta distinguendum.

Hab. Guatemala.

Mus. nostr.

These differences seem sufficient to distinguish this bird. The figure in 'Exotic Ornithology,' which was taken from a Guatemalan bird, displays them. The Costa-Rican *P. leucote* has the head almost black, and I can detect no median streak whatever. The superciliary mark, so clear in *P. occipitale,* is scarcely perceptibly shown towards the nape in *P. leucote,* the feathers behind and above the eye being black like the crown. The pectoral spot in the Guatemalan bird is small, and quite isolated from the black throat, whereas in the Costa-Rican species the large black spot of the chest blends with the black throat, a few white feathers alone being usually, but not always, seen between them—a character described by Cabanis as "*jugulo pectoreque supremo nigro, albo intermixtis.*"

That the two birds are distinct is not surprising, as both are inhabitants of temperate climates, and a wide expanse of hot country separates their respective homes.

I have nothing to add to the account given of *P. occipitale* in 'Exotic Ornithology,' except to say that I obtained a good many specimens of the species from its haunts on the slopes of the Volcan de Fuego in 1873, and that, so far as I can see, the sexes are quite alike in colour.

The second bird I have to describe is a species of *Odonto-*

phorus from Veragua, two specimens of which, through M. Boucard's kindness, we have been able to add to our collection. They were received by him direct from Veragua a few weeks ago. I propose to call the bird, from its grey chest,

ODONTOPHORUS SPODIOSTETHUS, sp. n.

Pileo rufescenti-brunneo, collo postico et dorso antico eodem colore, plumis singulis medialiter cinerascentibus; dorso postico, cum tectricibus supracaudalibus, nigro, fulvo et cinereo minutissime irroratis; primariis fusco-nigris, secundariis fulvo irregulariter transfasciatis et vermiculatis; alarum tectricibus maculis magnis nigris notatis et fulvescenti-albo vermiculatis; fronte et capitis lateribus cum mento læte rufis, tectricibus auricularibus fusco-brunneis; pectore toto cinereo; ventre medio cervino; hypochondriis fuscis obscure fulvo vermiculatis; ventre imo et crisso nigro irregulariter transfasciatis; rostro nigro; pedibus corylinis: long. tota cir. 7·5, alæ 4·2, caudæ 1·7, tarsi 1·3, rostri a rictu ·7.

Hab. Veragua.

Mus. nostr.

This species has no near relative that I am acquainted with, but agrees in dimensions with the bird recently described by me (Ibis, 1876, p. 379) as *Odontophorus cinctus*, which Mr. Rowley has figured in his 'Ornithological Miscellany' (iii. p. 39, pl. lxxxvi.). In coloration, however, it differs widely, the forehead and sides of the head being bright rufous, the chest cinereous, instead of rufous, and the belly buff, instead of white. Moreover the well-defined black crescentic marks of the flanks in *O. cinctus* are absent in this species. The second specimen of *O. spodiostethus* is evidently in immature plumage. It has, however, all the characteristics of the adult, the colouring of the sides of the head being less clearly defined.

Some few years ago Mr. Godman and I obtained from Mr. Gould by exchange a Pigeon, which I took at the time to be a specimen of the little-known species *Osculatia sapphirina*, Bp., the type of which graces the gallery of the Paris Museum. This original specimen, according to Prince Bonaparte, who described it (Consp. ii. p. 73, and Compt. Rend. xl. p. 101), was obtained by the Italian traveller Gaetano Osculati during his journey down the Rio Napo in 1847*. This bird was subsequently figured by Bonaparte in his 'Iconographie des Pigeons,' pl. 96.

From the type, and from the figure of *Osculatia sapphirina*, our bird differs in having the crown of the head of a rich blackish purple, from which the white forehead is sharply defined. No such character is to be seen in *O. sapphirina*; but I supposed that perhaps our bird was the male, the other the female, of the same species; and so the matter rested, waiting the advent of more specimens. These at last came. Mr. C. Buckley's recent Ecuador collections contained three examples, all of them agreeing with the true *O. sapphirina* of Bonaparte. With both birds now before me, I no longer doubt that they really belong to two distinct species; so I now characterize the undescribed one as

OSCULATIA PURPURATA, sp. n.

Supra rufo-purpurascens, capite summo lætissime purpureo, dorso splendide violaceo, uropygio nitente cyaneo-purpureo; dorso superiore et collo postico æneo-viridi micantibus; fronte, striga malari, gutture et ventre toto albis; pectore pallide cinereo; striga utrinque gulæ nigra; subalaribus et corporis lateribus sordide cinnamomeis; crisso rufescente; remigibus fusco-nigris; rectricibus nigris, trium utrinque externarum apicibus cinereis; rostro fusco; pedibus carneis: long. tota cir. 7·5, alæ 5·2, caudæ 2·6, tarsi 1·5, rostri a rictu 1·0.

Hab. Rep. Æquatoria.

Mus. nostr.

Obs. Affinis *O. sapphirinæ*, sed colore purpureo capitis distinguenda; macula secundariorum alba quoque absente.

On comparing this bird and *O. sapphirina* with *Geotrygon cristata*, the type of the genus *Geotrygon* of Gosse, I think Bonaparte was justified in placing them in a genus distinct from that bird. Not only is the general bulk of *Osculatia* more slender than that of *Geotrygon,* but its tarsi are much longer in proportion to its size, the tail is much shorter, and the outer primaries much reduced in width towards the end, instead of each being a broad feather with a uniformly curved edge to the inner web. All the members of *Geotrygon* have uniformly coloured tails; and in having ashy tips to its rectrices *Osculatia* approaches *Leptoptila.* Indeed it seems, as Bonaparte says, to occupy an intermediate position between *Leptoptila* and *Geotrygon.*

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* Though a list of birds obtained by Osculati during his travels between 1846 and 1848 is given by Cornalia in the 'Esplorazione delle Regioni Equatoriali' (2nd edit., 1854, pp. 305–307), no mention is made of this Pigeon, which appears to have been separated from the rest of the collection, and presented to the Paris Museum in 1853.

Bonaparte's plate does but scant justice to the extreme beauty of *O. sapphirina.* This and the bird now described are by far the most lovely of South-American Pigeons. The head of *O. sapphirina* is white on the forehead, which colour gradually shades into grey on the occiput, which again passes into metallic green towards the nape, and then to bronze on the hind neck and upper back. As already stated, *O. purpurata* has the forehead white, the top of the head and nape being of a very dark rich purple.

XXXVI.—*Note on the Breeding of the Sacred Ibis in the Zoological Society's Gardens.* By P. L. Sclater.

(Plate XII.)

The Sacred Ibis being naturally a bird of much interest to the readers of this Journal, some notes on the breeding of this species, concerning which few details* appear to have been hitherto recorded†, may not be unacceptable.

The Sacred Ibis (*Ibis æthiopica*) is a bird which does well in captivity, and of which examples are to be seen in most of the larger zoological gardens of Europe. In the Regent's Park our Sacred Ibises pass the winter in the "Western Aviary" along with individuals of the allied species, *Ibis bernieri*, *I. strictipennis* *, and *I. melanocephala*, and other members of the group. In the summer the flock of Ibises is turned out onto what is called the "Waterfowls' Lawn," where they pass their time happily enough, stalking about on the green sward, and wading into the adjoining pond.

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* Heuglin (Orn. N.O.-Afr. ii. pp. 11, 38) speaks of the breeding-places of this bird on the flooded islands and river-banks of the Eastern Soudan, and correctly describes the eggs. He was not himself able to ascend to the nests, which are placed on high trees in large colonies.

† In our 'Nomenclator' Mr. Salvin and I (following Vieillot) have used *Ibis* for the American group of *I. alba* and *I. rubra.* But *Ibis* was applied by Savigny in 1810 to the Sacred Ibis, before Vieillot used it for the former group, for which, consequently, *Eudocimus* of Wagler is the correct term. *Cf.* Elliot, P. Z. S. 1877, p. 482.

In 1876 two individuals of the Sacred Ibis on the lawn were observed to be pairing, and, having been supplied with small sticks, made a loose flat nest in a low bush, about two feet from the ground, on the opposite side of the pond from the walk. Two eggs were laid, but, it is believed, rolled out of the nest, and came to nothing.

In 1877 the attached pair renewed their efforts, and were more successful. Two eggs were laid on a flat nest, in nearly the same situation, about the middle of June. One of them was hatched on July 6th, after about twenty-one days' incubation; the other was addled. The young bird grew quickly, and in less than a month was of nearly the same size as its parents. As will be seen by Mr. Smit's sketch (Pl. XII.), it was immediately distinguishable from them by the nearly straight and shorter bill, by the head and neck being covered by short black feathers, and the absence of all the ornamental plumes. This bird is still living in the Gardens (August 1878), and has nearly attained the plumage of maturity, although there still remain some short black feathers on the head and neck.

In 1878 a pair of Sacred Ibises (it is believed the same pair) have renewed their attempts to breed. One egg was dropped before the birds were turned out on the grass-plot, about April 22nd. One other was laid in the nest, after it

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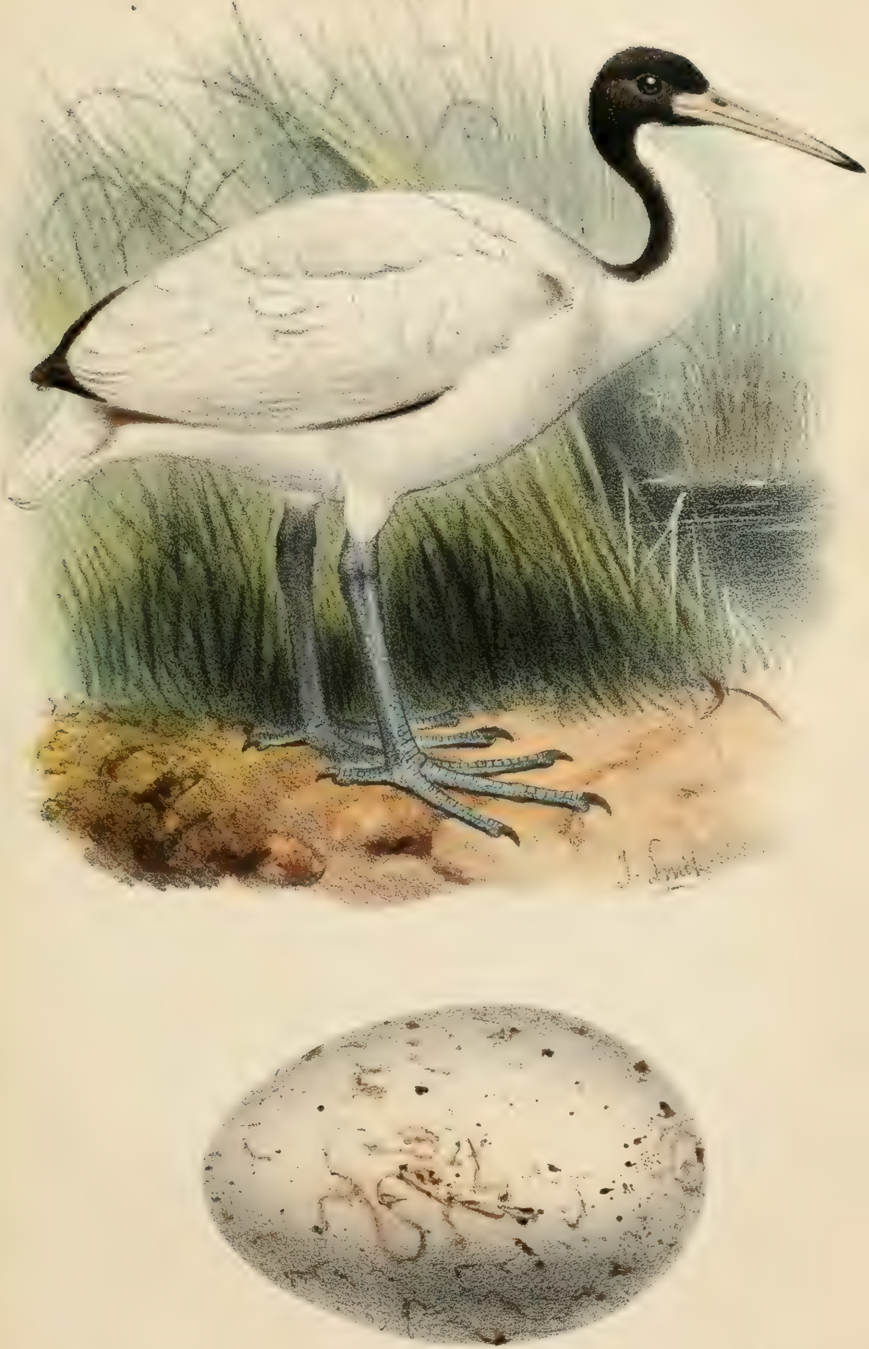
* As already noted (Ibis, 1878, p. 112), it is not difficult for the most unlearned observer to distinguish this eastern representative of the Sacred Ibis, when alive, from its allied form, although Mr. Elliot (P. Z. S. 1877, p. 487), not having succeeded in realizing the differences in dead specimens, has united the two species.



Smit lith.

Hanhart imp.

YOUNG AND EGG OF SACRED IBIS

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OF NATURAL HISTORY.

was made in the usual situation, but, I regret to say, came to nothing, although the parents sat alternately on it for at least ten or twelve days. A second nest was subsequently formed, and two more eggs laid; but, unfortunately, no results were obtained.

The egg of *Ibis æthiopica*, which is now figured (Pl. XII.) from the specimen laid this year before the birds left the aviary, measures about 2·6 inches by 1·9. It is white, slightly speckled and scratched with reddish brown, and seems to me to resemble, as it naturally would, the egg of the Spoonbill more than that of any other bird with which I am acquainted.

Mr. E. C. Taylor (*anteà*, p. 372) has lately recorded the occurrence of the Sacred Ibis in Lower Egypt, concerning which Captain Shelley* seems to have been rather too incredulous, as has already been remarked by Heuglin (*l. s. c.*). Heuglin himself saw an example shot near Quata, in the Delta, in 1864, by the hunting-party of Prince Halim Pasha; and there are other records of the same kind, although the bird is, no doubt, only an occasional straggler so far north.

XXXVII.—*Notes on a 'Catalogue of the* Accipitres *in the British Museum,' by* R. Bowdler Sharpe (1874). By J. H. Gurney.

[Continued from p. 356.]

The Sea-Eagles, which I propose next to consider, form a group nearly allied to the typical Aquilinæ, but chiefly distinguished from them by having the tarsus bare of feathers, except for a short distance below its upper extremity, and also by their more aquatic habits, both as regards the localities which they frequent, and the food on which they, for the most part, subsist.

The group of Sea-Eagles may appropriately bear the title of Haliaetinæ, which was used by the late Mr. Blyth, though in a somewhat wider sense than that in which I adopt it, at

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* 'Birds of Egypt,' p. 261.

p. 29 of his 'Catalogue of the Birds in the Museum of the Asiatic Society.'

Under the head of Haliaetinæ I include the genera *Thalassaetus, Haliaetus,* and *Polioaetus,* as well as the more abnormal one of *Gypohierax.*

The largest Eagle of this group, and also the most powerful, especially as regards the great size of the bill, is the sole species comprised in the genus *Thalassaetus, T. pelagicus,* of North-eastern Asia and Japan.

The genus *Thalassaetus* is not separated by Mr. Sharpe from *Haliaetus*; but I think it ought to be so, as having fourteen rectrices, instead of twelve, the number in *Haliaetus**.

T. pelagicus is also remarkable for the shape of the tail being more decidedly cuneiform than is the case in any other Sea-Eagle except *Haliaetus leucogaster.*

So few examples of *T. pelagicus* exist in this country, that I think it worth mentioning that the Norwich Museum is fortunate in possessing it in three stages, one specimen being a fully fledged nestling, taken from a nest at Tasmunskoi, on the shores of the Sea of Okhotsk, on the 23rd July, 1853, a second being an immature bird beginning to assume the adult dress, and the third being an old bird, in which the remarkable adult garb has been fully developed.

Very little inferior in size to *T. pelagicus,* and spread over a vastly more extensive geographical area, is the typical species of the genus *Haliaetus, H. albicilla.*

Mr. Sharpe's summary of the countries where this Eagle exists is necessarily concise; but a more detailed account will be found in Mr. Dresser's article on this species in the 'Birds of Europe,' including some particulars of its occurrence in Northern Africa and in the Canary Islands, both of which are localities unnoticed by Mr. Sharpe.

Mr. Sharpe and Mr. Dresser both mention the occurrence of *H. albicilla* in the Aleutian Islands; but in Mr. W. H. Dale's account of the avifauna of those islands, published in the 'Proceedings of the California Academy of Science' for 1873–74, the only Sea-Eagle given as an inhabitant of the Aleutian Islands is *H. leucocephalus,* a species exceedingly well known as taking the place of *H. albicilla* throughout Northern America, with the exception of Greenland.

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* *Conf.* Baird, Brewer, and Ridgway's 'North-American Birds,' vol. iii. pp. 321, 322, with figure of tail of *Thalassaëtus.* I have not had an opportunity of examining the tail of *Haliaëtus vociferoides.*

Before leaving the subject of *H. albicilla,* I may mention that the very curious ash-coloured specimen from Ireland which was living many years ago in the Gardens of the Zoological Society, and which was figured in Meyer's 'British Birds,' is now preserved in the Norwich Museum.

The pure white head, which distinguishes the North-American *H. leucocephalus* in its adult plumage, is also a characteristic of the adult dress of two other species of this genus, *H. vocifer* and *H. leucogaster,* the latter of which is remarkable as being the most purely oceanic of the Sea-Eagles, both in its habits, and also in its widely extended range over the seas and islands of the east, which is well epitomized in Mr. Sharpe's volume, and more particularly detailed at p. 2 of Count T. Salvadori's recent 'Prodromus Ornithologiæ Papuasiæ et Moluccarum.'

H. vocifer is especially noticeable as one of the most beautifully coloured of the birds of prey, and is certainly "facile princeps" amongst the Sea-Eagles in this respect.

Mr. Sharpe gives the habitat of *H. vocifer* as "the whole of Africa;" but this is not quite correct, as it is certainly absent from the most northern parts of that continent, and, so far as I am aware, does not occur, except perhaps very accidentally, to the north of the twentieth degree of north latitude.

Few facts connected with the Sea-Eagles are more curious than the circumstance of one species, *H. vociferoides,* being peculiar to the island of Madagascar, and even there, to judge from the very small number of specimens that have reached Europe*, existing, probably, in very limited numbers.

It may naturally be expected that this Eagle should sometimes wander to the smaller islands adjacent to Madagascar;

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* I am not aware of the existence of a single entire specimen of the Madagascar Sea-Eagle in any museum in this country.

and, as an instance of its doing so, I may mention that the Norwich Museum possesses the head and foot of an Eagle, apparently a young bird of this species, which was obtained in the island of Mauritius, as already recorded in 'The Ibis' for 1869, p. 449.

Judging from this foot, it would seem that the groove on the lower surface of each claw, and especially of the hinder claw, is decidedly wider in *H. vociferoides* than in *H. vocifer*, in which latter bird these grooves are narrower and more contracted than in any other species of *Haliaetus*. In the remarks on *H. vociferoides* in 'The Ibis' for 1869, to which I have already referred, I alluded to that species as apparently occupying an intermediate position between *H. vocifer* and *H. leucoryphus*, to which latter species I will now pass on, and, with it, will conclude my observations on the genus *Haliaetus*.

Mr. Sharpe gives the geographical habitat of *H. leucoryphus* as extending from Burmah as far westward as the Caspian; but there is, I think, no doubt that the Sea-Eagle observed and obtained in the Crimea by Col. Irby, and recorded in the 'Zoologist,' vol. xv. p. 5353, and in 'The Ibis' for 1861, p. 223, was of this species; and a probable instance of its having nested still further westward, in the Pravidy valley, Bulgaria, is recorded by Mr. Farman in 'The Ibis' for 1869, p. 202.

The northern range of this species is not referred to by Mr. Sharpe, but appears to extend to Mongolia and Eastern Siberia, and probably also to China; for further details on this subject I would refer to the article on this Eagle in Dresser's 'Birds of Europe,' to the translation of Prjevalsky's Mongolian notes in the 'Ornithological Miscellany,' vol. ii. p. 148, to Dr. Finsch's observations recorded in 'The Ibis' for 1877, pp. 53, 54, and to David and Oustalet's 'Oiseaux de la Chine,' p. 14.

Mr. Sharpe refers in a footnote to a specimen of this Eagle in the British Museum as "marked by Mr. Gray as the true *H. leucoryphus* (Pall.), but without any register or trace of its origin." I am happy to be able to clear up the obscurity attending this specimen, as I was informed by Mr. Gray, shortly after it was acquired by the Museum, that it had been obtained on the river Syr Daria, in Khokan.

The genus *Polioaetus* is associated by Mr. Sharpe with that of *Pandion* in a separate suborder, to which he assigns the title of Pandiones. I agree with him that it is right that *Pandion* should be thus separated from the Sea-Eagles, as it certainly is a very peculiar and isolated form; but I cannot assent to the propriety of removing the genus *Polioaetus* from among the Sea-Eagles to place it with the Ospreys.

The leading character which Mr. Sharpe attributes to his suborder "Pandiones"* is that of the "outer toe" being "reversible;" but although this is the fact in *Pandion*, I am not aware that it is so in *Polioaetus*, or that it has been so recorded by any observer who has handled in the flesh birds of that genus; and, indeed, Jerdon seems to imply the contrary, since he speaks of *Polioaetus* as having "differently formed feet" from *Pandion* (*vide* 'Birds of India,' vol. i. p. 81).

The only peculiarities in which, as it appears to me, *Polioaetus* is assimilated to *Pandion* rather than to *Haliaetus* are the shortness of the tibial feathers, which, however, are slightly longer than in *Pandion*, and the circumstance of the under surface of the claws being destitute of a grooved channel. On the other hand, two very remarkable characteristics of *Pandion*, the absence of an after-shaft from the contour-feathers, and the equal size of the claws, do not exist in *Polioaetus*, in which genus, moreover, the scutellation of the tarsi and toes resembles that of *Haliaetus*, and is altogether different from the roughened reticulation which characterizes those parts in *Pandion*.

The genus *Polioaetus* comprises three species, *P. ichthyaetus*, *P. plumbeus*, and *P. humilis*. Of these Mr. Sharpe only recognizes, in his volume, as good species the first and the last; but I think that the distinctness of *P. plumbeus* must be admitted, specifically from *P. ichthyaetus*, and sub-specifically from *P. humilis*.

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* Mr. Sharpe places his suborder "Pandiones" at the close of his volume, and I propose to adopt a similar order of sequence as relates to the genus *Pandion*.

P. ichthyaetus, the largest of the genus, and also the most widely diffused, is, when in adult plumage, readily distinguished by the tail being white, with a broad terminal band of brown.

Mr. Sharpe enumerates various localities in which this species is to be found, and some additional information on this head is given by Mr. Hume in a valuable note on this genus in 'Stray Feathers,' for 1877, pp. 129, 130, in connexion with which I may mention that the most north-westerly locality in which I have heard of this bird being obtained is the neighbourhood of Delhi, where, as I learnt from my late friend Mr. A. Anderson, a specimen exhibiting the characteristic white base of the tail was procured by Captain Bingham, either in January or early in February, 1876.

Mr. Sharpe describes the irides of the adult bird of this species as "brown;" but this appears to be their colour in the young stage only (*vide* Hume's 'Scrap-book,' p. 241, footnote, also 'Stray Feathers,' 1875, pp. 29, 30); the adult bird in Java, according to Horsfield's 'Zoological Researches,' has the irides "bright sulphur-yellow;" and Captain Legge has noted the irides of the adult in Ceylon as "clear yellow, beautifully mottled with brown" (*vide* Ibis, 1875, p. 278); two adults from Ceylon, in the collection of the Marquis of Tweeddale, are simply marked by the collector as having the irides "yellow."

P. plumbeus is a somewhat smaller bird than *P. ichthyaetus*, and, according to Mr. Hume (*vide* 'Stray Feathers,' 1877, p. 11), is considerably less bulky; it, however, approaches, and in some cases even equals, *P. ichthyaetus* in the measurement of the wing; it is an inhabitant of the countries lying immediately to the south of the Himalayan mountains, and is stated by Mr. Hume to range as far westward as Afghanistan, and eastward to Assam (*vide* 'Stray Feathers,' 1877, p. 130).

For further particulars as to this species I would refer to the account given of it by Mr. Hume in his 'Nests and Eggs of Indian Birds,' p. 43, and in the passages in 'Stray Feathers' for 1877, to which I have already referred, and also to Mr. Anderson's remarks in the P. Z. S. for 1876, p. 777, the latter being accompanied by a good plate of the adult bird. This, however, is unfortunately figured in an attitude which does not show the upper surface of the tail, the coloration of which constitutes the most marked distinction, from the absence of the white base in *P. plumbeus,* between that species and *P. ichthyaetus.*

In *P. plumbeus* the entire upper surface of the tail is brown, except a narrow white tip to all the rectrices other than the central pair, and sometimes very slightly apparent on that pair also, though occasionally this white tip is altogether absent.

The inner webs of all the rectrices, except the central pair, are more or less marked with white or pale brown, the external feathers being the most variegated, but this is not apparent when the tail is closed.

There is a broad subterminal band across the closed tail, slightly darker than the upper part of the tail-feathers; but the difference of tint is often so slight as to be barely perceptible.

I can perceive no difference in coloration between *P. plumbeus* and *P. humilis,* except that in the latter the dark subterminal band across the tail is a little more distinct, in consequence of the portion of the rectrices immediately above it being slightly paler than in *P. plumbeus*; and I am disposed to consider *P. humilis* merely a smaller south-eastern race of *P. plumbeus,* distinguishable as a subspecies, but not entitled to full specific rank.

Mr. Sharpe defines the geographical range of *P. humilis* as "from Assam down the Malayan peninsula to Sumatra and Celebes;" but Mr. Hume* doubts its being found in Assam, and gives, as the nearest point in that direction from which he has seen it, Cape Negrais, on the eastern shores of the Bay of Bengal. In connexion with this question I may mention that Mr. Sharpe, in his list of specimens of *P. humilis* preserved in the British Museum, enumerates a male from India and a male from Assam. I have not had an opportunity of examining these specimens, but I am indebted to the kindness of Mr. Seebohm for a note of the measurement of the wing in each of them: the first only measures 14·5 inches from the carpal joint, and is therefore, no doubt, a genuine *P. humilis*; but whether it is really an Indian specimen, I should think is doubtful; and as it was presented by the late Dr. J. E. Gray more than thirty years ago, having been included in the Museum Catalogue published in 1844, it is probably impossible now to ascertain any further particulars as to the locality whence it was obtained. The Assam specimen, Mr. Seebohm informs me, has a corresponding measurement of 16·6 inches in the wing, which, if the sex of the bird be rightly determined, affords a very strong presumption that it should be referred to *P. plumbeus* rather than to *P. humilis*.

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* *Vide* 'Stray Feathers' for 1877, p. 130.

Mr. Sharpe, subsequently to the publication of his volume, recorded, in 'The Ibis' for 1876, p. 32, a specimen of *P. humilis* from Borneo; and another Bornean example was presented several years since to the Norwich Museum, where it is still preserved.

The genus *Gypohierax*, containing but a single species, a native of the sea-coast and large rivers in some parts of tropical Africa, is arranged by Mr. Sharpe next in order to *Haliaetus*, and may, I think, be properly considered as belonging to the group of Sea-Eagles, although it has by some ornithologists been treated as an aberrant Vulture*, notwithstanding the vulturine appearance of the bare skin around its eyes and the naked line on either side of the throat, an appearance somewhat strengthened by the remarkable similarity in the colouring of its plumage, both in the immature and in the adult stage, to the Egyptian Vulture (*Neophron percnopterus*).

The upper mandible and cere in *Gypohierax* greatly resemble in their outline and proportions those of *Gypaetus*, a genus in which vulturine affinities decidedly exist.

It should also be mentioned that in *Gypohierax* the front of the tarsus is not scutellated, as in *Haliaetus* and in *Polioaetus*, but is reticulated, very much as is the case in *Circaetus*; and a larger portion of the upper surface of the toes is also reticulated in *Gypohierax* than in the other genera of Sea-Eagles: the claws in *Gypohierax* resemble in their structure those of *Haliaetus*, possessing the groove in the lower surface, which is absent in *Polioaetus* and in *Pandion*.

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* I myself included *Gypohierax* amongst the Vultures in a Catalogue of a portion of the birds of prey in the Norwich Museum, which was published in 1864.

The only East-African locality given by Mr. Sharpe for *Gypohierax angolensis* is the island of Pemba, near Zanzibar; but since his volume was published an immature specimen obtained by Mr. Ayres in Transvaal has been recorded in 'The Ibis' for 1877, p. 340.

The next group of genera which seems to me to present itself in natural sequence amongst those comprised in the very wide range of Mr. Sharpe's "subfamily Aquilinæ" is that of the Milvinæ, or Kites, in which I would include the following—*Gypoictinia*, *Haliastur*, *Milvus*, and *Lophoictinia*.

Taking *Milvus* as the typical genus of this group, we must admit that *Gypoictinia* is a somewhat aberrant one; but I agree with Mr. Sharpe in the opinion expressed in his note upon the sole species of this genus in the P. Z. S. for 1875, p. 339, that "the bird is a Kite, and not a Buzzard," though referred to the genus *Buteo* in Mr. Gould's original description*: it differs from the birds of the three other Milvine genera in having the front of the tarsus reticulated, rather than transversely scutellated, and in the much greater development of the upper mandible of the bill, both of which peculiarities indicate the propriety of arranging the genus *Gypoictinia* next to *Gypohierax*, in which these characteristics are also apparent.

Gypoictinia melanosternon appears to be a species of extreme rarity. One of Mr. Gould's type specimens is, if I mistake not, in the Museum of Philadelphia, and another in that at Leyden; the Museum at Brussels is also fortunate in possessing a specimen, as is the British Museum in having recently acquired one. These are the only examples that I know of, with the exception of one, which was exhibited in the Australian Department of the Great Exhibition of 1861, and which, I understood at the time, was intended to be returned to Australia at the close of the Exhibition. Whether this was done I know not; but Mr. E. P. Ramsay, in his Catalogue of Australian Accipitres in the Museum at Sydney, states "this is the only Australian species" not represented in that collection.

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* *Vide* P. Z. S. 1840, p. 162.

The example in the British Museum is from the interior of Queensland, which should therefore be added to the localities quoted for this species in Mr. Sharpe's volume.

The position of the genus *Haliastur*, to which I propose next to refer, was well described by the late Dr. Jerdon in the following remarks on the species inhabiting India, which will be found at p. 102 of the first volume of his work on the birds of that country :—It may be considered either an aberrant form of *Haliaetus* leading to the Kites, or an aberrant Kite leading to the Sea-Eagles; and its small size and near affinities to *Milvus* have decided me to class it with the Kites."

The genus *Haliastur* comprises two species, *H. indus* and *H. sphenurus*; but the first of these, which ranges from Cashmere and China northwards, to as far southwards as Australia, comprises three geographical races or subspecies, the northern and north-western, the typical *H. indus*, in which the white portions of the plumage in the adult bird, *i. e.* the head, neck, breast, and interscapular region, have conspicuous dark shaft-marks on the feathers; the south-eastern, *H. girrenera*, in which these shaft-marks are most frequently entirely absent; and the race inhabiting various intervening localities, in which they are present, but are narrower, fainter, and frequently fewer than in *H. indus*; the birds of this form have received the specific appellation of *H. intermedius*, but vary much in the different islands where they are found, some approaching nearer to *H. indus* and others to *H. girrenera*, these variations for the most part corresponding with the geographical position of the localities which the birds inhabit.

For further particulars as to these curious gradations and variations of plumage, I would refer to the late Mr. Blyth's remarks in 'The Ibis' for 1865, pp. 27, 28, and for 1866, pp. 246, 247, also to Professor Schlegel's, in the Supplementary Catalogue of the 'Muséum des Pays-Bas,' A. Accipitres, pp. 119–123 (in which some interesting details as to variation of size are also given), to Lord Tweeddale's, in his "List of the Birds of the Philippine Archipelago," published in the Transactions of the Zoological Society, vol. ix. p. 142, and lastly to a paragraph devoted to this subject at p. 314 of Mr. Sharpe's volume.

Some differences are also perceptible in the colour and intensity of the dark shaft-marks on the rufous mantle, these varying in different localities from reddish brown to black; and another very variable feature in the plumage of these birds will be found in the transverse, but usually more or less imperfect, brownish-black bars which occur in most adult specimens on the inner webs of the primaries, secondaries, and tertials, or some of them, and sometimes also on those of the rectrices other than the central pair: these bars are, for the most part, assumed at the time of the bird first attaining its adult dress; but I have seen one moulting specimen (marked N in the following list) in which these bars have evidently been assumed on the primaries at a later period; I suspect, however, from other specimens which I have examined, that they usually disappear with advancing age.

Some additional information may perhaps be gleaned from the following memoranda of details, taken from the adult, or nearly adult, specimens of *H. indus*, *H. intermedius*, and *H. girrenera* preserved in the Norwich Museum, and which I here distinguish by a letter for facility of reference:—

A, from Poonah, India. This, as regards the dark shaft-marks, may be taken as a typical adult example of *H. indus*; the transverse bars exist on the secondaries and tertials, but not elsewhere.

B, from Cashmere. A moulting specimen, the old plumage being adult as well as the new, but greatly faded in its rufous portions, which have assumed in consequence a curious tinge of pale pinkish brown; the old secondaries and tertials are barred, but the new feathers coming up amongst them are not so; the dark shaft-marks on the rufous mantle are very black, and more conspicuous than in any other specimen that I have seen, an effect which is heightened by the faded character of the adjacent plumage.

C, from Sumatra. This bird, which is adult, only differs from A in having the black shaft-marks on the rufous mantle somewhat less strongly marked, those on the white portions of the plumage, and the transverse bars on the wing, being almost identical in character and extent.

D, from Banjermassing, South Borneo. This adult specimen only differs from C in having the dark shaft-marks on the white portion of the plumage rather less distinctly marked, and also in the entire absence of transverse bars from the quill-feathers of the wings and tail.

E, from Flores. This bird is also adult, and resembles D, with the exception that the shaft-marks on the white portions of the plumage are still less strongly marked, and that slight and imperfect traces of dark transverse bars are perceptible on the inner webs of some of the primaries and tertials.

F, from Macassar. This specimen has nearly assumed the adult dress, but the feathers of the wing-coverts are still tipped with pale fulvous; with this exception all those portions of the plumage which are rufous in the adult are rufous in this specimen, though not quite so intensely as in older birds; the white portions of the plumage are as in the fully adult bird, and show no admixture whatever, except a few narrow dark shaft-marks on the centre of the crown of the head, and some others on the nape of the neck; the dark shaft-marks on the rufous mantle resemble those of D; the inner webs of the rectrices, except the central pair, and also those of the secondaries and tertials, are transversely barred with brownish black.

G, from Macassar. A moulting bird, which has nearly completed its passage from the immature to the adult dress; some secondaries and tertials belonging to the former dress still remain; of these the first are rufous, transversely barred with imperfect transverse brown bands on the inner webs; in the second the inner webs are marbled with brown, as in the earliest stage of plumage, but are not barred: the new secondaries and tertials are all a plain unbarred rufous on their inner webs, as are the primaries also; the central pair of rectrices are wanting, the remainder, which have not yet been moulted, are barred like the unmoulted secondaries and tertials. This specimen has lost the immature fulvous tips to the wing-coverts, and also wants the nuchal striæ which are apparent in F, which, with the above exceptions, it closely resembles.

H, Togian Isles, Celebes. This specimen, as regards the shaft-marks, resembles F, with the exception of those on the rufous mantle being rather less strongly marked, and those on the breast being less numerous; it appears to be fully adult, but the inner webs of the secondaries and tertials are transversely barred with brownish black*.

I, from Morty Island. An adult specimen entirely destitute of dark shaft-marks on the white portions of the plumage, and with those on the rufous mantle not very conspicuous, and in many of the feathers of a dark-rufous colour rather than black; this bird shows no dark transverse bars, except a few very imperfect traces on some of the primaries of one wing only.

J, from Gilolo. An adult specimen, imperfectly marked with dark transverse bars on the inner webs of all the quill-feathers of the wings and tail, except the central rectrices, the shaft-marks rather strongly marked on the rufous mantle, but entirely absent from all the white portions of the plumage.

K, from Batchian. Apparently an old bird, resembling J in all respects, except that the shaft-marks on the rufous mantle are less strongly marked, and that there are no traces of cross bars on the quill-feathers of the wings or tail, except a single spot which remains on the inner web of one of the lateral rectrices.

L, from North Ceram. This specimen entirely resembles K, except that the tail is wholly immaculate.

* The Celebean race was supposed to be distinct by the late Dr. F. Brüggemann, who proposed for it the subspecific name of "*ambiguus*."

M, from Amboyna. Nearly adult, but retains the tail-feathers of the immature plumage unmoulted; in these the inner webs of the lateral rectrices are marbled, not barred; it also retains the primaries and tertials unmoulted, and in these the inner webs are transversely barred, but in the secondaries, which are newly acquired, they are unbarred; in other respects the plumage agrees with G, except that the dark shaft-marks are rather more widely spread on the crown, and are also apparent on the back of the head.

N, from New Guinea. This is an interesting specimen, as it is moulting, and the dress which it is losing and that which it is acquiring are both adult; some of the new primaries are transversely barred on their inner webs, whilst the remaining old primaries are all unbarred; the rectrices are newly acquired, and show a very slight amount of barring, broken into spots; in other respects the plumage resembles that of K and L.

O, from Percy Island. An adult bird, resembling L, except that it exhibits dark transverse bars on the inner webs of the rectrices, other than the central pair, and also on those of many of the primaries, secondaries, and tertials.

P, from Port Essington, North Australia. An adult specimen, which resembles L, with the following exceptions, viz.—a few very slight dark shaft-marks apparent on the centre of the crown of the head, and dark transverse bars on the tertials, and, less distinctly, on some of the secondaries.

Q, from Rockingham Bay, N.E. Australia. An adult, with dark transverse bars on the tertials only; in other respects resembling P, with the exception of having well-marked dark shaft-marks on the nape, and also the striæ on the crown of the head being rather more widely diffused.

R, from the east coast of Australia. Adult, resembling O in all respects.

The following are the principal dimensions of eight specimens of *Haliastur intermedius* and *H. girrenera* which are preserved in the Norwich Museum, and of which the sex has been recorded by the collector:—

MALES.

Locality.	Sex recorded by	Wing. in	Tarsus. in.	Middle toe *s. u.* in.
Java (immature).	Dr. Bernstein.	16	2·1	1·4
Macassar (nearly adult).	Mr. Wallace.	15·7	1·8	1·2
Morty Island (adult).	Ditto.	13·6	1·9	1·4
Rockingham Bay (adult).	Collector unknown.	15·3	2	1·3
Eastern coast of Australia.	Mr. F. Strange.	15	1·8	1·3

FEMALES.

Locality.	Sex recorded by	Wing. in	Tarsus. in.	Middle toe *s. u.* in.
Philippine Islands.	M. Jules Verreaux.	15·5	1·9	1·3
Percy Island.	Collector unknown.	15·2	2·1	1·4
Port Essington.	Ditto do.	14·7	2·1	1·6

Mr. Wallace (*vide* Ibis, 1868, p. 16) speaks of the colour of the iris in the birds of this genus from "Malacca, Sumatra, Timor, Flores, Borneo, Philippine Islands, and India" (all which he includes under *H. indus*) as "dull yellow," and in those from "Celebes, all the Moluccas, and New Guinea," (which he refers to *H. girrenera*) as "olive-brown"; but both are probably liable to some variations. Mr. Gould, in his great work on the 'Birds of Australia,' speaks of the irides in adult Australian specimens as "light reddish yellow," and in his 'Handbook,' subsequently published, he adds that immature birds have "darker-coloured eyes" than the adults. The adult bird from Percy Island which is preserved in the Norwich Museum was noted by the collector as having a "reddish chocolate" iris. Professor Schlegel, in his 'Valk-Vogels,' p. 51, gives, on the authority of S. Müller, the colour of the iris in the adult as "brun clair," and in the young as "brun:" Müller's specimens in the Leyden Museum were obtained from Sumatra, Macassar, Amboina, and Western New Guinea; and his observation, no doubt, related to these or to some of them. Indian specimens, according to Mr. Hume ('Scrap-book,' p. 316), have the irides "brown," and those found in China are described by David and Oustalet ('Oiseaux de la Chine,' p. 15) as having them of a "brun châtain."

In the work last mentioned the *Haliastur* inhabiting China is mentioned as having "la tête, le cou, et la poitrine d'un blanc pur et plus ou moins marqués d'étroites raies brunes." Whether the Chinese bird is referable to *H. indus* or to *H. intermedius,* I am unable to say; but in any case the localities where it occurs are more northern than any of those quoted for either race by Mr. Sharpe, and are thus defined by the Abbé David in the volume to which I have just referred:—"Je l'ai rencontré et pris au Tchékiang et au Kiangsi, où il niche sur les grands arbres . . . . il disparaît de ces provinces pendant l'hiver et se retire dans la Cochinchine."

I may add, with reference to the subject of geographical distribution, that the Norwich Museum possesses an immature *Haliastur* from Camboja; but the bird is too young to enable me to say to which subspecies it should be referred.

Some details as to several islands inhabited by *H. intermedius* and *H. girrenera,* additional to those furnished by Mr. Sharpe, will be found in Count Salvadori's 'Prodromus Ornithologiæ Papuasiæ et Moluccarum,' Accipitres, pp. 3, 4, where three localities not mentioned by Mr. Sharpe are also given for the sole remaining species of the genus *Haliastur, H. sphenurus;* these are Yule Island, and also the rivers Fly and Katau, in the southern part of New Guinea.

I have only to add, with regard to this latter species, that Mr. Sharpe's description of the young bird as being "much paler" than the adult, must, I think, have been taken from a faded specimen, as an immature bird in the Norwich Museum is decidedly darker than the adults in the same collection, with the exception of the pale tips to the feathers of the mantle.

[To be continued.]

XXXVIII.—*Notices of recent Ornithological Publications.*

46. *'Bulletin' of the Nuttall Ornithological Club.*

The April and July numbers of this journal contain a full budget of papers on North-American birds, besides notices of the most recent works on the birds of the same region. Dr. Brewer (p. 49) restores *Totanus ochropus, Larus canus*, and *Ægialitis hiaticula* to, and subtracts *Podiceps cristatus* from, the North American fauna. As regards the latter bird, we have Mr. Ridgway's authority for saying that it is "quite numerous in Franklin Lake," though no specimens could be obtained (Rep. Geol. Survey 40th Parallel, iii. Ornith. p. 642), so that Dr. Brewer's verdict may require reconsideration.

Mr. C. H. Merriam (pp. 52, 123) has some remarks on some of the birds of Lewis county, Northern New York. Mr. W. Brewster (pp. 56, 115) continues his descriptions of the first plumage in various species of North-American birds. Mr. Ridgway (p. 64) gives notes on some of the birds of Calaveras county, California, and adjoining localities. Dr. W. A. Cooper (p. 68) gives notes on the breeding-habits of *Vireo huttoni* and *Lophophanes inornatus*, with descriptions of their nests and eggs. Mr. E. A. Mearns (p. 69) describes unusually developed individuals of three species of birds, and remarks on uncommon plumages in several others, taken near West Point, New York. Dr. Brewer (p. 72) has some notes on *Junco caniceps* and the closely allied forms, and Mr. J. Murdoch (p. 75) describes the effects of a warm winter on the migration of birds. Amongst the reviews we may call special attention to Dr. Coues's abridged translation of Dr. Bureau's interesting paper (*vide infrà*). In the July number Dr. Coues (p. 105) gives us one of his carefully wrought articles, and treats of "The Eave, Cliff, or Crescent Swallow (*Petrochelidon lunifrons*):" Mr. Henshaw (p. 112) describes the nest and eggs of the Blue Crow (*Gymnokitta cyanocephala*): Mr. E. P. Bicknell (p. 128) has some interesting notes on the "Evidences of the Carolinian Fauna in the Lower Hudson Valley, principally from observations taken at Riverdale, New York," on which Mr. J. A. Allen (p. 149) has something to say. Mr. Brewster describes (p. 133) the nesting of the Large-billed Water-Thrush (*Siurus motacilla* (Vieill.)). Then Mr. Trotter describes a hybrid between two North-American Swallows (*Hirundo horreori-lunifrons*!). Amongst the notices of recent literature Dr. Coues reviews Mr. Saunders's paper on the Sterninæ (P. Z. S. 1876, p. 638), and gives a revised list of the North-American species, with special reference to his own work on the same subject.

47. *Lawrence on new* Trochilidæ *and* Tetraonidæ.

[Descriptions of new Species of Birds of the Families Trochilidæ and Tetraonidæ. Ann. N.Y. Ac. Sc. i. p. 50.]

The Humming-birds here described are *Sporadinus bracei*, from New Providence, Bahamas, apparently a close ally of *S. ricordi* of Cuba; and *Orthorhynchus emigrans*, said to be from Venezuela, and allied to *O. cristatus*. Of the so-called *O. emigrans*, through Mr. Lawrence's kindness, we possess a specimen, and cannot forbear to say that we altogether fail to see how it differs from the ordinary *O. cristatus*. Then, too, we have been brought up to believe that *Orthorhynchus* is a purely Antillean genus. Is Mr. Lawrence sure that there is no mistake in the origin assigned to his *O. emigrans*?

The Quail described is called *Cyrtonyx sumichrasti*, the characters being drawn up by Prof. Sumichrast, in anticipation of the specimen being transmitted to Washington. It is evident from the description that the species must be closely allied to *C. sallæi*.

48. *Lawrence on new West-Indian Birds.*

[Descriptions of Seven new Species of Birds from the Island of St. Vincent, West Indies (Ann. N.Y. Ac. Sc. i. p. 147); and Descriptions of supposed new Species of Birds from the Islands of Grenada and Dominica, West Indies (*op. cit.* p. 160).]

Mr. Ober, whose doings in Dominica we have already recorded (*anteà*, p. 195), has since been attacking St. Vincent and Grenada. In the former island he succeeded in securing specimens of thirty-five species of birds, and observed or obtained tidings of twenty-four others. In the latter he obtained specimens of twenty-eight species. Mr. Lawrence, to whom the collections were submitted, has in the first paper described seven species as new, all more or less interesting, and some even remarkable species. There is amongst them a true *Turdus*, called *T. nigrirostris*. A *Myiadestes*, of which we have before had tidings (*cf.* Hill in Gosse's B. of Jam. p. 200), turns out to be a remarkably distinct species, which is named *M. sibilans.* Then there is a Wren called *Thryothorus musicus*; two species of *Certhiola, C. atrata* and *C. saccharina,* of which the former is almost entirely black (!); a second species of *Leucospeza, L. bishopi*; and lastly a *Calliste, C. versicolor,* a genus quite novel to the fauna of the Antilles. This last is said to be allied to *C. cucullata,* and Mr. Lawrence compares it with the plate in Sclater's 'Monograph of *Calliste.*' Can it be *C. cucullata* itself, of which we know so little, and of the habitat of which nothing certain has been recorded? In the second paper three species from Grenada are called respectively *Turdus caribbæus, Thryothorus grenadensis,* and *Quiscalus luminosus*; and a *Blacicus,* from Dominica, previously supposed to be identical with the Cuban *B. blancoi,* is differentiated as *B. brunneicapillus.*

49. *Brewer on New-England Birds.*

[Notes on certain Species of New-England Birds, with Additions to his Catalogue of the Birds of New England. Proc. Bost. Soc. N. H. xix. pp. 301–309.)]

The birds of New England have long been a favourite study of Dr. Brewer's. He is now able to add twenty-one species to those already recorded, and raises the number of New-England birds to the large total of 356. Considering that forty species have been added to the list since 1874, it is evident that accessions may still be looked for.

50. *E. Mulsant on a new* Trochilus.

[Description d'une espèce nouvelle de Trochilidé. Ann. Soc. Linn. d. Lyon, 12 Oct. 1877.]

The Humming-bird here described was obtained by Mr. Boucard in Costa Rica. M. Mulsant proposes a new generic and specific name for it, calling it *Arinia boucardi.*

51. *Professor Owen on the Solitaire.*

[On the Solitaire (*Didus solitarius,* Gm.; *Pezophaps solitarius,* Strickl.). Ann. & Mag. N. H. ser. 5, i. pp. 87–97.]

This paper is based upon the Solitaire bones obtained during the Transit-of-Venus Expedition to the island of Rodriguez. From these remains two nearly entire skeletons have been put together, and placed in the gallery of the British Museum.

Prof. Owen, fully acknowledging the validity of the genus *Pezophaps*, describes several portions of the skeleton not represented in the series of bones examined by Messrs. A. and E. Newton for their memoir on this extinct bird (Phil. Trans. 1869, p. 327). He also discusses various theories as to the evolution and destruction of this extraordinary bird, where, however, we can scarcely follow him. We hope ere long to see a still further account of the osteology of the Solitaire, the joint work of Messrs. E. Newton and J. W. Clark, who have not only had the same materials as Prof. Owen to work at, but also another series of bones, equally large, brought to this country by the former gentleman. We believe that it is generally, but apparently not universally, known that their memoir has been for many months in the hands of the Royal Society for publication.

52. *A. Milne-Edwards on the Systematic Position of the genus* Mesites.

[Observations sur les affinités zoologiques du genre *Mesites*. Compt. Rend. Apr. 1878.]

The position of this peculiar form of Madagascar has long been a puzzle to ornithologists, and it has been placed in widely diverse positions by different authors. The controversy may now be considered set at rest; for the receipt by M. Grandidier of two specimens in spirit has enabled Prof. A. Milne-Edwards to look more deeply into the question; and his verdict is that this curious bird must be considered the sole representative of a family which must be placed near the Rails and Herons. Mr. E. Bartlett (P. Z. S. 1877, p. 292) had previously arrived at nearly the same result. M. Milne-Edwards also states that *M. unicolor* of Des Murs is the female of *M. variegatus* of Geoffroy, a conclusion arrived at from an examination of his recently acquired specimens.

53. *Rowley's 'Ornithological Miscellany,'* Part xiv.

Since our notice of part xiii. of this work (*anteà*, p. 193), a fourteenth has been published, completing the third volume, and, we regret to say, bringing the work to a conclusion. Our readers will regret to learn that ill health has obliged the energetic editor of the 'Ornithological Miscellany' to abandon his task.

The first paper in the final number is by Lord Tweeddale, on *Poliohierax insignis*, a plate (ciii.) of which is given. Mr. Rowley continues his notes on the genus *Ptilopus*, figuring *P. speciosus*. Mr. Sharpe has an article on the genus *Artamus* and its geographical distribution, wherein an Australian species is described as new and called *A. venustus*. Concerning the name to be adopted for the Philippine *Artamus*, Mr. Sharpe's views have already been criticized (*anteà*, p. 383). Mr. Rowley then has "A few words on Fen-land," wherein he treats of fens, geese, ducks, decoys, &c., giving anecdotes and notes appertaining thereto. The next article is an abridged translation of Count Wodzicki's note on Savi's Warbler, published in 1853 in the 'Journal für Ornithologie.' Then follows notes on breeding-places in England of *Anas fuligula* and *A. ferina*. A few notes on the Kittiwake is succeeded by remarks on the extinct gigantic birds of Madagascar and New Zealand, accompanied by full-sized drawings of the eggs of *Æpyornis maximus*, *Dinornis ingens*, and *D. crassus*. A further note on *Sceloglaux albifacies* brings Mr. Rowley to his concluding remarks.

54. *J. H. Gurney, Jun., on the Birds of the Fern Islands.*

[Notes on the Fern Islands and some of the Birds which are found there. Pr. Nat. Hist. Soc. Glasgow, 1877, pp. 268–278.]

A comparison of Mr. Gurney's notes with Selby's account of the birds breeding on the Fern Islands, published in the 'Zoological Journal' in 1826, give us data for noting the changes that have taken place in the bird-population of those interesting islands during the lapse of more than half a century. Mr. Gurney's record leaves us with the sad impression that, unless the supposed restrictions on the destruction of breeding birds are more strictly enforced, the days of several of the most interesting species will soon be numbered, if they be not already told. The Roseate Tern, of which there was a numerous colony in Selby's time, Mr. Gurney tells us *may* exist; whilst the Sandwich Tern, few in number according to Selby, but numerous some twenty years ago when we saw them, seem now again on the wane, owing to senseless persecution.

Cannot our northern brethren do something to render the protection of the birds on these islands more efficient? An effort should surely be made, as no other sea-bird breeding-station in England can show half the interest of the Fern Islands.

55. '*Proceedings*' *of the Linnean Society of New South Wales.*

We have omitted to notice several ornithological papers published in parts 3 and 4 of vol. i. of the 'Proceedings' of the Linnean Society of New South Wales. The following are their titles:—

(1) "List of Australian Game Birds and other Species which should be protected by the 'Game Preservation Act,'" by E. Pierson Ramsay, i. p. 182.

(2) "Remarks on a supposed new Species of *Poephila*," by E. Pierson Ramsay, *l. c.* p. 197.

(3) "Remarks on the large number of Game Birds which have of late been offered for sale in Sydney," by E. Pierson Ramsay, *l. c.* p. 215.

(4) "Note on *Poephila gouldæ*," by E. Pierson Ramsay, *l. c.* p. 281.

(5) Note of a Collection of Birds from New Britain, New Ireland, and Duke-of-York Islands, with some Remarks on the Zoology of the Group," by E. Pierson Ramsay, *l. c.* p. 369.

(6) "On a Collection of Birds from the Norman River, Gulf of Carpentaria," by M. Le Comte de Castelnau, Consul General of France, and E. Pierson Ramsay, *l. c.* p. 379.

(7) "Notes on a Collection of Birds from Port Moresby, with Descriptions of new Species," by E. Pierson Ramsay, *l. c.* p. 386.

As regards *Poephila gouldæ,* Mr. Ramsay appears to have come to just the contrary conclusion to Captain Armit, as recorded below.

In No. 6 Messrs. Castelnau and Ramsay describe as new *Epthianura crocea, Poephila atropygialis,* and *Zosterops gulliveri,* all from specimens obtained on the Norman river, Gulf of Carpentaria. In No. 7 Mr. Ramsay gives an account of Mr. A. Goldie's collections made during "a perilous sojourn of nearly twelve months at Port Moresby, New Guinea." Among the eighty-seven species of which examples were in the collection, *Eopsaltria brunnea* and *Donacola nigriceps* are described as new.

In vol. ii. pt. 2 of the same journal (1877) we also find two papers of Mr. Ramsay. In the first of these, entitled "Notes on some Birds from Savage Island, Tutuela, &c." (*l. c.* p. 139), Mr. Ramsay gives some stray notes on a small collection of birds brought by Mr. S. J. Whitmee from several islands. A *Ptilopus* from Savage Island, belonging to the group of *P. porphyraceus,* is endowed with a provisional name (*P. whitmeei*) in case "it may eventually prove to belong to a distinct species."

Mr. Ramsay's second paper, entitled "Tabular List of the Birds of Australia," is of some importance, as it gives a useful list of all known Australian birds, and a table showing their range in Australia : 744 species are acknowledged, the number given in Mr. Gould's 'Hand-book' having been 672. Some notes on obscure and uncertain species are appended, and a description of *Pachycephala occidentalis,* sp. nov., from Western Australia, allied to *P. gutturalis.*

56. *Capt. W. E. Armit on two Australian* Poephilæ.

[Note on Australian Finches of the genus *Poephila.* By Captain William E. Armit, F.L.S. Journ. Linn. Soc., Zoology, vol. xiv. p. 95.]

Capt. Armit maintains the distinctness of *Poephila gouldæ* from *P. mirabilis,* basing his observations on specimens of both species obtained by himself in Queensland. [*Cf.* Ramsay, *suprà.*]

57. *Elliot's Monograph of the Hornbills.*

[A Monograph of the Bucerotidæ, or Family of the Hornbills. By D. G. Elliot, F.R.S.E., F.L.S., &c. Parts ii.–v., small folio, 1877. Published by the Author.]

Of Mr. Elliot's excellently illustrated Monograph of the Hornbills we have already spoken (Ibis, 1877, p. 376). The parts issued since (namely ii.–v.) contain figures of the following species :—

Part II.

Bucorvus abyssinicus.
Hydrocorax planicornis.
Anthracoceros malabaricus.
Rhytidoceros undulatus.
Anorrhinus comatus.
Tockus flavirostris.

Part III.

Buceros rhinoceros.
Anthracoceros malayanus.
Cranorrhinus cassidix.
Bycanistes cristatus.
Lophoceros nasutus.
Tockus hemprichii.

Part IV.

Dichoceros bicornis.
Anorrhinus leucolophus.
Penelopides panini.
Anthracoceros coronatus.
Tockus gingalensis.
Tockus griseus.

Part V.

Aceros nepalensis.
Pholidophalus fistulator.
Penelopides manillæ.
Rhytidoceros plicatus.
Tockus fasciatus.
Tockus semifasciatus.
Lophoceros birostris.

Mr. Elliot is not quite sufficiently careful about his localities to please the exigencies of modern science. Surely he must know full well that *Hydrocorax planicornis* is not a "native of the Moluccas!" Does not "*B. rhinoceros,* var. *javanica,*" of Müll. et Schl., apply to the Javan *B. lunatus,* which is certainly distinct from *B. rhinoceros*?

58. *Harvie Brown's Notes on Sutherlandshire Birds.*

[Supplementary Notes on the Birds found breeding in Sutherland. By J. A. Harvie Brown. Pr. Nat. Hist. Soc. Glasgow, 1877, pp. 226–248.]

The birds of Sutherland have for some years past been under investigation by Mr. Harvie Brown, who has already published a series of notes respecting them (Pr. N. H. Soc.

Glasg. ii. p. 69). In these supplementary notes his remarks on the increase or decrease of certain species will be read with interest.

59. *Bureau on the Moulting of portions of the Puffin's beak.*

[De la mue du bec et des ornements palpébreaux du Macareux Arctique *Fratercula arctica* (Linn.), Steph., après la saison des amours. Bull. de la Soc. Zool. de France, 1878.]

Mons. Bureau has made the exceedingly interesting discovery that certain portions of the beak of the Puffin, at the base of the maxilla and of the mandible, and also the two horny excrescences above and below the eye, are regularly shed every year after the breeding-season, and as regularly assumed as that season approaches. From observations made by the author in a colony of these birds off the coast of Brittany, he is able to give a full account of the process of change which the Puffin's bill undergoes. The number of deciduous pieces is no less than thirteen altogether. These are fully described, and their position shown in two plates which accompany the paper. Similar changes doubtless take place in the other species of *Fratercula*, as Mons. Bureau suggests. These mostly concern our American brethren, who will no doubt be not slow to take up so novel and interesting a subject for observation. The fact that portions of the bill in certain birds are seasonally deciduous is not absolutely a novel discovery; for Mr. Ridgway has taught us that the horny protuberance on the bill of *Pelecanus trachyrhynchus* is shed every year. But this is not nearly so elaborate a performance as that which the Puffin undertakes. We are glad to see that this interesting paper has been appreciated on both sides of the Atlantic, as shown by Dr. Coues's copious notice of it in the April number of the 'Nuttall Bulletin,' and Mr. Harting's translation (accompanied with a copy of one of the plates) in the July number of the 'Zoologist.'

60. *Ridgway's Studies of the American Herodiones.*

[Studies of the American Herodiones. Part I. Synopsis of the American Genera of *Ardeidæ* and *Ciconidæ*; including Descriptions of three new Genera, and a Monograph of the American Species of the Genus *Ardea*, Linn. (Bull. Hayden's Survey, iv. No. 1, Feb. 5, 1878.)]

These "Studies" of Mr. Ridgway's bear evidence of having been carefully considered, and a praiseworthy attempt is made to give characters defining the sections and subsections into which the order Herodiones is divisible. Except as regards the American forms of the order, Mr. Ridgway's materials do not seem to be so complete as could be wished; for the important Old-World genera *Scopus, Anastomus, Balæniceps,* and others, the author says, are autoptically unknown to him.

Mr. Ridgway must, we think, reconsider his assignment of *Eurypyga* to the Herodiones; its points of relationship to the Ralli and divergence from the Herodiones are so many, that its position near the Rails, so forcibly maintained by many authors, seems most worthy of adoption.

The Ardeidæ, or true Herons, are devided into Ardeinæ and Botaurinæ: the former containing fourteen genera, of which three are new; the latter two genera. These new genera are *Dichromanassa,* with *Ardea rufa* as its type, *Hydranassa* (no type indicated), and *Syrigma,* type *Ardea sibilatrix.* The characters of all these genera are drawn chiefly from the form of the ornamental plumes of the adult birds.

In his monograph of the genus *Ardea* four American species are dealt with. Mr. Ridgway's remarks on *Ardea occidentalis,* and its suggested identity with *A. würdemanni,* will be read with great interest. Those who look forward to the synonymy of the future with perplexity will not be much encouraged by the array of references Mr. Ridgway produces under the heading *Ardea herodias.* We can only hope that such displays as this will soon produce a reaction in favour of selecting such references as are really useful, and the avoidance of obvious repetition*.

In treating of the American Ciconiidæ Mr. Ridgway finds it necessary to propose a new generic name, *Euxenura,* for *Ciconia maguari,* on account of the peculiarities of the rectrices and under tail-coverts. This name is equivalent to *Dissoura,* applied by Dr. Cabanis in 1850 to the Old-World *Ciconia episcopus,* so Dr. Reichenow tells us, who, however, uses the latter name in a subgeneric, and not a generic sense. We are somewhat startled by Mr. Ridgway's statement that though Linnæus's definition of his genus *Mycteria* suits the bird usually known as *M. americana,* L., the Linnæan *species* is *Ciconia maguari* ! Mr. Ridgway gets over the difficulty by changing the authorship of the specific name from Linnæus to Gmelin; and, so far as we are concerned, we are content to let it be so; but we do not fail to notice a fine opening for some one partial to such work to put quite a different interpretation upon the matter.

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* All through this paper we notice that to a certain 'Catalogus Avium' is assigned an important place in the synonymy, too important, we think, when the mode of compilation of this work is considered.

61. *Ridgway's Report of the Ornithology of the United-States Geological Exploration of the* 40*th Parallel.*

[Extract from Vol. IV. of the Geological Exploration of the Fortieth Parallel. Clarence King, Geologist in Charge. Part III. Ornithology, pp. 307–669.]

The materials from which this Report was drawn were collected by Mr. Ridgway himself, between June 1867 and August 1869, the district investigated lying between Sacramento City, California, and Salt-Lake City, Utah. The introductory portion of the Report contains careful analyses of the bird-population of the several districts explored. The rest of it consists of an account of each species, many of the biographical notes being full of interest. (See J. A. Allen, Bull. Nutt. Orn. Club, 1878, p. 81.)

62. *United-States Geographical Surveys West of the* 100*th Meridian.*

[Report upon United-States Geographical Surveys West of the 100th Meridian. In charge of Lieut. G. M. Wheeler. Vol. IV. Palæontology. By Charles A. White, M.D., and Prof. E. D. Cope.]

At p. 69 of this Report Prof. Cope gives a further account of the remains of the species of bird he described in 1876 as *Diatryma gigantea,* an Eocene bird of doubtful affinity. At p. 287 more details are supplied of *Vultur umbrosus,* described in 1875. Figures of the bones of both these species are given in the plates with which this volume is enriched.

63. *Mollendorff's Vertebrata of the Province of Chihli.*

[The Vertebrata of the Province of Chihli, with Notes on Chinese Zoological Nomenclature. J. North-China Branch R. As. Soc. 1877, pp. 41–111.]

The ornithological portion of this paper occupies part ii. (pp. 76–102), and consists of an enumeration of Chinese birds, compiled chiefly from the writings of Swinhoe and Père David. To some birds a note is given of their distribution, and to many their names in Chinese are added. The introduction contains a list of works on the natural history of North China, both foreign and Chinese.

64. *Tschusi zu Schmidhofen's 'Birds of Salzburg.'*

[Die Vögel Salzburg. Eine Aufzahlung alle in diesem Lande bisher beobachteten Arten, mit Bemerkungen und Nachweisen über ihr Vorkommen. 8vo, pp. 90. Salzburg: 1877.]

This paper seems to be an amplification of the author's former articles on the same subject, published in the 'Zoologischer Garten' for 1875–76, and is a handy guide to the birds of the Salzburg district. 239 species are mentioned, to the names of each of which certain useful references are given, and a note appended mentioning when and where each species has been found or may be looked for.

65. *Pelzeln on Birds from Ecuador.*

[Weitere Sendungen von Vögeln aus Ecuador. Verh. k. k. zool.-bot. Ges. 1878, pp. 15–20.]

This paper consists of lists of two collections of bird-skins recently received at the Vienna Museum. The first calls for no special comment; but in the second we notice the names of several rare species, such as the Humming-birds *Urochroa bougueri*, *Urosticte ruficrissa*, and *Boucieria insectivora*. This collection also contained *Cyanocitta pulchra* of Lawrence, and a species of *Chlorochrysa*, which Hr. von Pelzeln here describes as new under the name of *C. sodiroi*. It is compared with *C. phœnicotis,* to the female of which it is apparently nearly allied*.

66. *Salvadori's Prodromus of Papuan Ornithology.*

[Prodromus Ornithologiæ Papuasiæ et Moluccarum. V. Accipitres. Ann. Mus. Genov. xii. p. 32.]

Of Accipitres in the Papuan subregion, Salvadori recognizes 54 species, of which 38 are represented in the collections of D'Albertis, Beccari, and Bruijn by 242 specimens. *Ninox salamonis,* Sharpe, = *N. variegata* (Q. et G.), as pointed out by Sclater, P. Z. S. 1878, p. 290. This reduces the list by one.

67. *Salvadori on a new Species of* Lanius.

[Descrizione di una nuova specie del genere *Lanius.* Ann. Mus. Genov. xii. 25 May, 1878.]

Lanius antinorii is based on a single male specimen, obtained by Marchese Orazio Antinori near Afinu (Danakil) in August 1876. It seems to be allied to *L. pallidirostris,* Cassin.

68. *Salvadori on new Species of Papuan Birds.*

[Descrizione di trentuna specie nuove di uccelli della sottoregione Papuana, e nota intorno ad altre poco conosciute. Ann. Mus. Genov. xii. 25 May & 6 June, 1878.]

This paper gives the results of the author's recent examination of the specimens of Papuan birds in the collections of Paris, London, Leyden, Bremen, Berlin, Dresden, and Vienna, made in September and October last year. The new species described are:—

1. *Nesocentor aruensis,* from the Aru Islands.
2. *Hirundinapus celebensis,* from Celebes.
3. *Monarcha diadematus,* from Obi.
4. *Monarcha bernsteinii,* from Salwatty.

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* Since the above was in type, Herr von Pelzeln has kindly sent his specimen to us for inspection. There can be little doubt, we think, that the skin is that of a female *C. phœnicotis,* of which we have precisely similar specimens in our collections.

5. *Monarcha pileata,* from Halmahera.
6. *Rhipidura saturata,* from Salwatty.
7. *Micrœca læta,* from New Guinea.
8. *Graucalus parvulus,* from Halmahera.
9. *Graucalus sclateri,* from New Ireland.
10. *Graucalus fortis,* from Buru.
11. *Edoliosoma meyeri,* from Mysor.
12. *Edoliosoma dispar,* from Ké, Banda, &c.
13. *Edoliosoma obiense,* from Obi.
14. *Pachycephala obiensis,* from Obi.
15. *Pachycephala cinerascens,* from Ternate and Tidore.
16. *Melanocharis unicolor,* from Jobi.
17. *Myzomela rubrotincta,* from Obi.
18. *Glyciphila nisoria,* from New Guinea.
19. *Glycichæra* (gen. nov.) *fallax,* from New Guinea.
20. *Glycichæra poliocephala,* from New Guinea.
21. *Stigmatops squamata,* from Choor.
22. *Ptilotis ixoides,* from New Guinea.
23. *Philemon meyeri,* from New Guinea.
24. *Zosterops fuscifrons,* from Halmahera.
25. *Zosterops hypoleuca,* from New Guinea.
26. *Zosterops aureigula,* from Jobi.
27. *Zosterops novæ-guineæ,* from New Guinea.
28. *Zosterops buruensis,* from Buru.
29. *Zosterops frontalis,* from Aru Island.
30. *Gerygone notata,* from New Guinea.
31. *Gerygone hypoxantha,* from Mysore.

Many useful notes on the allied forms and on other species examined are likewise given. *Banksianus fulgidus* of Lesson =*Dasyptilus pecqueti.* *Parus arfaki* of Meyer=*Oreocharis stictoptera* of Salvadori, and is a Dicæine form. *Budytes novæ-guineæ,* Meyer,=*Motacilla melanope,* the eastern form of *M. sulphurea.*

We trust that we may soon have the pleasure of seeing in print the first portion of Dr. Salvadori's 'Papuan Ornithology,' to the advantage of which his tour round other museums will, we are sure, have contributed not a little.

69. *Salvadori on new Species of Papuan Birds.*

[Nuove specie di Colombi dei generi *Megaloprepia*, Reich., e *Macropygia*, Sw. Ann. Mus. Genov. xii. p. 426.]

Megaloprepia poliura, from Jobi and Southern New Guinea, a "conspecies" of *M. magnifica*, and *Macropygiæ buruensis* and *maforensis*, from the islands indicated by their names, standing in similar relationship to *M. amboinensis*, are here described. Tables of the representative forms of both genera are given.

70. *Salvadori on certain Cassowaries.*

[Intorno ad alcune specie di Casoari poco note. Ann. Mus. Genov. xii. p. 419.]

Of three Cassowaries' skins received in the beginning of this year from Hr. Bruijn, M. Laglaize sold one (the most adult), which came from Wandammen, to the British Museum, the second, from Warbusi, to the Jardin des Plantes, and the third (not adult, and without exact locality) to Count E. Turati, of Milan. To the first of these the name of *Casuarius altijugus* was given by Sclater at a Meeting of the Zoological Society of London on 19th of Feb., 1878*, but was afterwards withdrawn in favour of the name *salvadorii*†, under which, on the 23rd February, M. Oustalet described the second‡. The third specimen turns out to be *C. tricarunculatus* of Beccari, founded upon a living example from Warbusi, which Beccari left at Ternate in 1875 under Hr. Bruijn's care. Dr. Salvadori now doubts whether Cassowary No. 2, from Warbusi, is really identical with No. 1 from Wandammen, *i. e.* whether *C. altijugus* really = *C. salvadorii*, *i. e.* if the localities are rightly assigned.

Dr. Salvadori has given the provisional name *C. sclateri* to *C. beccarii* of Sclater in P. Z. S. 1875, p. 527, pl. 58, from Southern New Guinea, as he thinks it probably different from *C. beccarii* (verus) of the Aru Islands. Sclater has remarked (P. Z. S. 1878, p. 213) that this specimen, now in the British Museum, can hardly be distinguished from Cassowary No. 1 of the preceding list, *i. e.* from *C. altijugus*.

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* See 'Nature,' vol. xvii. p. 375.

† See P. Z. S. 1878, p. 212.

‡ Bull. Ass. Sc. de France, vol. xxi. p. 349.

C. occipitalis of Salvadori, from Ansus, Jobi, of which the typical specimen is now at Genoa, is a close ally of *C. uniappendiculatus,* and has a small median wattle, not mentioned in Salvadori's original description, which is now revised accordingly.

C. westermanni, Sclater, is, according to Dr. Salvadori, =*C. papuanus,* Rosenb., and *C. edwardsi,* Oustalet, P. Z. S. 1878, p. 389, pl. xxi., likewise, in his opinion, not different.

71. *Salvadori on a new Species of* Chalcopsittacus, *and on New-Guinea Birds.*

[Descrizione di una nuova specie di uccello del genere *Chalcopsittacus,* Bp., e note intorno ad altre specie di uccelli della Nuova Guinea. Atti della R. Ac. Sci. Tor. xiii. p. 309.]

Chalcopsittacus bruijni, sp. nov., is from the Papuan island Amberpon, in the Bay of Geelvink; it is based on two female examples sent home by Hr. Bruijn through M. Laglaize. The same species appears to have also been described by M. Oustalet as *C. insignis* (Bull. Ass. Sc. France, Jan. 20, 1878). Other rare species spoken of in this article are *Cuculus leucolophus* of S. Müller, from Warbusi, and *Chalcophaps beccarii,* from Mount Arfak, of which the male is now described for the first time.

72. *Salvadori on a Collection of Birds from Tarawai.*

[Catalogo di una collezione di uccelli di Tarawai fatta dai cacciatori del Sig. A. A. Bruijn. Atti della R. Ac. Sci. Tor. xiii. p. 317.]

Gives an account of a collection from the island of Tarawai, or D'Urville Island, on the north coast of New Guinea (143° 7′ E. lat.), sent by Hr. Bruijn through M. Laglaize*. It contained 66 individuals, belonging to 16 species, of which *Hermotimia cornelia* is described as new. The others are known Papuan species.

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* *Cf.* Oustalet, Bull. Ass. Sc. France, No. 553 (Jan. 1878), where three of these birds are described as new. But Salvadori states that *Merops modestus,* Oust., =*M. ornatus*; *Chænorhamphus cyanopectus,* Oust., =*Todopsis grayi*; and *Megapodius decollatus,* Oust., =*M. affinis,* Meyer.

73. *Salvadori on* Trerolæma leclancheri, *Bp.*

[Intorno alla *Trerolæma leclancheri*, Bp., Nota. Atti R. Ac. Sci. Tor. xiii. pp. 425–428.]

Having examined the type of *Trerolæma leclancheri,* Bp. (Mus. Paris), said to be from New Guinea, Salvadori proclaims its identity with *Leucotreron gironieri* of the Philippines. Mr. Elliot (P. Z S. 1878, p. 568) has come to the same conclusion.

74. *Salvadori on a new* Hermotimia.

[Intorno agl' individui del genere *Hermotimia* dell' Isola del Duca di York. Atti R. Ac. Sci. Tor. xiii. p. 530.]

Cinnyris aspasia (Less.) of Shelley and Sclater, from Duke-of-York Island, is separated as *Hermotimia corinna.* In our opinion Dr. Salvadori goes rather too far in making so many different species of this form of Sun-bird.

75. *Salvadori on new Species of* Calornis *and* Carpophaga.

[Due nuove specie di uccelli dei generi *Calornis* e *Carpophaga* della sottoregione Papuana. Atti R. Ac. Sci. Tor. xiii. p. 535.]

Calornis, sp. inc., of Sclater (P. Z. S. 1877, p. 554), from the Admiralty Islands, is characterized as *C. purpureiceps,* and *Carpophaga rufigula* is described (being the representative in the Solomon Islands (San Cristoval) of *C. rubracera* of New Ireland) from a specimen in the British Museum, obtained by MacGillivray.

76. *Wallace's 'Tropical Nature.'*

[Tropical Nature, and other Essays. By Alfred R. Wallace. 8vo, pp. 356. London: 1878. Macmillan & Co.]

Mr. Wallace's essays on tropical nature, with which his twelve years' experience of the eastern and western equatorial zones have rendered him so familiar, will be read with great interest by every naturalist. The opening chapter is worthy of special notice, as giving an explanation of the causes of the wonderful uniformity of the climate of the tropics in popular language, and in a manner we have not seen successfully accomplished elsewhere. Hardly of less importance are the second and third essays on the peculiarities of the tropical flora and fauna, and their characteristic groups. One or two slips occur, such as when we are told that the blood-sucking bats belong to the genus *Phyllostoma**; but the general subject has never been treated of in a more lucid manner.

The fourth chapter, however, on the Humming-birds, as more especially illustrating the luxuriance of tropical nature, is that which will above all interest the ornithologist. Mr. Wallace's explanation of the way in which the singular state of affairs as regards the Trochilidæ of Juan Fernandez and Mas-afuera may have come to pass deserves particular attention.

77. *Nathusius on the Structure of the Egg-shell in the Oscines.*

[Abgrenzung der Ordnung der Oscinen von den Clamatoren, Scansoren und Columbiden durch die Structur der Eischalen. Von W. v. Nathusius (Königsborn). Zeitzsch. f. d. ges. Wiss. ser. 2, Bd. xviii. p. 69.]

In continuation of previous memoirs on the microscopical structure of the egg-shell in birds, Von Nathusius now describes the peculiar structnre of the egg-shell of the Oscines, and shows that that of the Clamatores is quite different, and agrees rather with that of the Scansores and Columbæ. *Cypselus* belongs in this respect to the latter type, while the structure of the egg-shell in *Hirundo* is distinctly Oscinine. In *Steatornis* the egg-structure is that of the Caprimulgidæ.

78. *Buller on the Birds of New Zealand.*

(1) "Notes on the Ornithology of New Zealand," by Walter L. Buller, Trans. & Proc. New Zealand Institute, vol. v. (1877) p. 191.

(2) "Further Notes on the Ornithology of New Zealand," by the same, *ibid.* p. 201.

(3) "On the Disppearance of the Korimako (*Anthornis melanura*) from the North Island," by the same, *ibid.* p. 209.

(4) "Further Descriptive Notes of the Huia (*Heteralocha acutirostris*)," by the same, *ibid.* p. 211.

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* *Op. cit.* p. 120. See what Mr. Dobson says on this point in his new 'Catalogue of Bats,' pp. 486, 549.

(5) "On the Egg of the Huia (*Heteralocha acutirostris*)," by the same, *ibid.* p. 212.

(6) "On the Species forming the Genus *Ocydromus*, a peculiar group of brevipennate Rails," by the same, *ibid.* p. 213.

(7) "Notice of the Occurrence of the Shy Albatross (*Diomedea cauta*) in the North Island," by the same, *ibid.* p. 217.

(8) "On the Addition of the Red-tailed Tropic-bird (*Phaethon rubricauda*) to the Avifauna of New Zealand," by the same, *ibid.* p. 219.

As will be seen by these titles, Dr. Buller is still working away at the birds of New Zealand, and has recorded several new additions to its avifauna. We are glad to find *Nestor meridionalis* is not yet dying out, being "very abundant in the Urewera country," where an "expert bird-catcher will sometimes bag as many as 300 in the course of the day." *Zosterops lateralis*, which only arrived in New Zealand in 1856, now "swarms all over the country." Other birds, however, such as *Anthrornis melanura* and *Miro longipes*, are fast disappearing. As regards *Ocydromus*, Buller holds to his opinion that there are only three well-marked species in New Zealand, namely, *O. earli* of the North Island, and *O. australis* and *O. fuscus* of the South Island, of the latter of which he considers *O. finschi* to be the young.

79. *Reed on the Zoology of the Province of Colchagua.*

[Apuntes de la Zoologia de la Hacienda de Cauquenes, Provincia de Colchagua, por Edwyn C. Reed. 8vo. Santiago de Chile: 1877.]

Mr. Reed, who has recently left the Museum of Santiago, and become Director of the Museum and Professor of Zoology in the Lyceum of Valparaiso, gives in this paper a list, with critical remarks, of the mammals and birds which he has met with within the limits of the extensive Hacienda of Cauquenes, in the province of Colchagua, Chili, belonging to the brothers Soto. The collection was made for the Chilian International Expozition of 1875, and has now been deposited in the Baños de Cauquenes. Most of the species included are well-known inhabitants of Chili. *Scytalopus albifrons*

(*Pteroptocho albifrons* of Landbeck) is recognized with some doubt as a distinct species, as may possibly be the case. The nomenclature and arrangement are those of our 'Nomenclator.'

80. *Carl on the Variations in the Skull of the Domestic Pigeon.*

[Untersuchungen über den Schädelbau domesticirter Tauben von L. Carl. Separatabdruck aus dem Osterprogramm 1878 der Realschule zu Pirna.]

An essay on the principal modifications found in the skull of the different varieties of the House-Pigeon. About sixteen races have been examined, the materials having been mostly furnished by the Royal Zoological Museum of Dresden.

81. *Wheeler's Annual Report upon the Geographical Surveys west of the* 100*th Meridian.*

[Annual Report upon the Geographical Surveys west of the 100th Meridian, in California, Nevada, Utah, Colorado, Wyoming, New Mexico, Arizona, and Montana. By George M. Wheeler. 8vo. Washington: 1876.]

One of the appendices by Mr. H. W. Henshaw contains an account of the birds met with in the southern parts of California visited by the expedition. Seven hundred specimens (referred to 127 species) were collected. *Uria columba* and *Fratercula cirrata* were found breeding on the island of Santa Cruz, in the Santa Barbara Channel, a more southern locality than was previously known for them.

82. *Pavesi on the Occurrence of the Dartford Warbler in Lombardy.*

[Sulla prima e recentissima comparsa in Lombardia del Beccafico di Provenza. Nota del S. C. prof. Pietro Pavesi. R. Inst. Lombardo d. Sci. e Lettere, Dec. 1877.]

Records the occurrence of an example of *Melizophilus undulatus* in Lombardy for the first time in December 1877. A list of forty-five species of birds which are occasional visitors to Lombardy is added.

XXXIX.—*Letters, Announcements, &c.*

We have received the following letters, addressed to the Editors of 'The Ibis:'—

233 Beacon Street, Boston.
July 11, 1878.

Sirs,—It is some time since I wrote to you concerning the explorations in the Rio-Grande region of South-western Texas which have been kept up with considerable activity by my young friend Dr. James C. Merrill, of the U.S. Army. I have therefere all the more to communicate.

Last spring Dr. Merrill found a Hawk's nest on the top of a low yucca-tree not five feet from the ground. He shot the parent, but it escaped, though desperately wounded, to where it could not be traced. From the size and general appearance of the eggs and the position of the nest, so characteristic of *Hypotriorchis femoralis,* I inferred it might be this species; but Dr. Merrill thought the bird, as he saw it, was something different, perhaps *Falco mexicanus.* But the present spring more nests have been taken, the parents secured, and my conjectures have been verified. We are thus assured that this species breeds within our limits, where before it has only been once taken as a chance visitor.

A *Vireo,* shot by Dr. Merrill last fall, and sent to Dr. Coues for identification, but which he failed to recognize as other than one of our common species, has been identified by Mr. Ridgway as a genuine *Vireo flavoviridis,* an entirely new species to our fauna, although included by Baird in the Smithsonian Catalogue as among the possibilities.

A *Sturnella,* obtained about the same time, Mr. Ridgway decides to be a true *S. mexicana,* also new to our fauna.

On the 10th of May last Dr. Merrill wrote me the following interesting note about a Hawk, which now proves also to be a new bird to our fauna:—"On the 2nd (of May) I found two large Hawks' nests, also placed in yuccas, each containing one egg measuring 2·35 by 1·91 and 2·35 by 1·85. This is the Hawk spoken of by Mr. Sennett in his list as *Archibuteo ferrugineus*; but I very much doubt this identification, for the differences in the plumage are too great to be merely varietal."

From the verbal account of the bird sent by letter, Mr. Ridgway thought it might prove to be the rare *Buteo cooperi*; but on taking it to Washington it has been ascertained to be *Buteo albicaudatus* of Vieillot, a not uncommon bird in Mexico, but never before taken within our territory.

It also turns out that the *Scops* found in the valley of the Rio Grande is not the *Scops maccalli* of Cassin, as has been all along supposed, but your Guatemalan variety, race, or species—what you will—*Scops enano*. What makes this determination the more unintelligible is the fact that, according to the Pacific R. R. Reports, vol. ix., *S. maccalli* was described from a Texan type. Cassin undoubtedly had also Californian specimens before him, all of them of the species now recognized as the true *S. maccalli*, and hence the confusion of the two forms by him.

Since the above was written, and before I had an opportunity of forwarding it, I have received a letter from Mr. Sennett; and as it gives me several interesting ornithological notes from the same region, I will briefly mention them.

The eggs of Sennett's new Dove, called *Æchmoptila albifrons*, instead of being white are of a decided olive hue. The species new to our fauna secured by Mr. Sennett are *Crotophaga sulcirostris* (in the Smithsonian list, but without evidence), *Pitangus derbianus*, and a Flycatcher whose name he does not mention. Mr. Sennett has also taken in Texas specimens of *Scops enano* and *Buteo albicaudatus*.

Yours &c.,

THOMAS M. BREWER.

P.S. I have just ascertained that the small rare Flycatcher taken by Mr. Sennett, and new to our fauna, is *Ornithion incanescens*, a but little-known species, and one that no one would have looked for as likely to turn up in the United States. Ornithologically, you see, we are extending a protectorate over the feathered inhabitants of Mexico and Central America, or rather they are seeking it.

Heligoland, August 29, 1878.

Sirs,—As perhaps it may interest some of the readers of 'The Ibis,' I beg leave to inform you that on the 20th inst. *Larus affinis,* Reinhardt, =*L. cachinnans,* Pall., =*L. borealis,* Brandt, was shot here, being the first instance of its capture off this island. The coloration of the back and outer wing-coverts forms an exact middle shade between the slaty black of *L. fuscus* and the light grey of *L. argentatus.* The specimen being in the moult for its winter-dress, the marks on the feathers of the neck appear darker than those of any Gull I know of; in fact these arrow-shaped marks may be termed pure black.

About the identity of the species no doubt whatever exists, as I have been able to compare the specimen with one of *L. affinis* in my possession, obtained by Dr. Otto Finsch on the Ob during his recent Siberian excursion.

I am, yours &c.,
H. Gätke.

Sirs,—Through the kindness of Dr. Günther I have been entrusted with the preparation of the volume of the Catalogue of Birds containing the Sylviidæ, a group of which the British Museum contains an excellent series from all parts of the eastern hemisphere. In attempting to arrange the various genera belonging to this subfamily, I have been obliged to treat some of them in a rather summary manner; and I venture to bring a few of my supposed discoveries before the readers of 'The Ibis,' in the hope that their criticisms may confirm or dispel my doubts.

Whilst describing the species of the genus *Acrocephalus,* I found that *A. insularis* (of which I have already expressed my opinion that *A. fasciolatus* was the young) was extremely aberrant. Firstly, it is the only *Acrocephalus* in which the young bird is decidedly yellow on the underparts. Secondly, it is the only species in that genus in which the rictal bristles are too small to be discernible with the naked eye. Thirdly, its tail is much more rounded than that of any of its companions. And fourthly, it is aberrant in having the upper parts uniform in colour, instead of being paler on the edges of the wing-coverts and inner secondaries. I find that by removing this species into the genus *Locustella,* in which I propose to place it, all these four peculiarities become typical, instead of aberrant; and the species will stand as *Locustella fasciolata* (Gray).

In attempting to find a niche among the Sylviidæ for the genus *Malurus,* I could find no place where it would fit naturally; and after an examination of its wide depressed bill and long rictal bristles, I handed it over to my friend Mr. Sharpe to place amongst the Muscicapidæ, where it seemed much more at home by the side of the equally gay-coloured *Todopsis.*

For the same reasons I rejected the genus *Gerygone,* and hope to see it also absorbed into the Muscicapidæ.

Some time ago I made a raid upon the genus *Abrornis,* and endeavoured to absorb several species hitherto generally placed in it into *Phylloscopus,* namely *A. fuliginiventris, A. erochroa, A. maculipennis,* and *A. viridipennis.* I now propose to make away with the remaining species of this genus, *A. schisticeps, A. flaviventris, A. poliogenys, A. albogularis, A. castaneiceps,* and perhaps some others, and consign them, along with *Culicipeta burkii, C. tephrocephala, C. cantator,* and *C. trivirgata,* as well as *Tickellia hodgsoni* and the African *Pindalus ruficapillus,* to the Muscicapidæ. I am also inclined to think that *Phylloscopus umbrovirens* would look better as a Phylloscopine *Muscicapa* than as a Muscicapine *Sylvia,* and might appear as *Pindalus umbrovirens* (Rüpp.).

If it were possible to place the genera of birds in a lineal arrangement, so that nearly allied genera should be in close proximity, I should like to see the Muscicapidæ close by the genus *Culicipeta,* to be followed by *Phylloscopus* as the first genus of the Sylviidæ. Any one who has watched the Willow-Warblers will admit that they are excellent fly-catchers, and catch flies on the wing almost as habitually as the Flycatchers themselves.

Yours &c.

London, Sept. 10, 1878. HENRY SEEBOHM.

West Wickham, Kent,
Sept. 14, 1878.

Sirs,—In Messrs. Blakiston and Pryer's list of the birds of Japan, published in the July number of 'The Ibis' for the present year (pp. 209–250), but two species of *Garrulus*, *G. brandti* and *G. japonicus*, are recorded as being natives of Japan. To these *Garrulus lidthi* of Bonaparte (P. Z. S. 1850, p. 80, t. xvii.) should certainly be added; for though for a long time its exact *patria* was uncertain, yet now there can be little doubt (*conf.* Count Salvadori's observations in Atti Acc. Reale Tor. vii. pp. 473–476 [1872], duly noticed in 'The Ibis' [1873, p. 478] and 'Zoological Record' [1872, p. 53]) that Japan is the true habitat of this fine Jay. I believe, however, that the exact island or islands where it occurs have yet to be ascertained.

I am, yours &c.,
W. A. Forbes.

The Bremen Museum.—Dr. Finsch has, as many of our readers will regret to hear, resigned the Curatorship of the Bremen Museum, which he has held for a period of fifteen years, in order to undertake a scientific mission to the Pacific. Dr. Finsch will leave Europe for San Francisco and Honolulu as soon as the publication of the results of the North-German Siberian Expedition are completed. He is succeeded at Bremen by Dr. Ludwig, lately Assistant in the Zoological Museum of Göttingen.

Carus's 'Zoologischer Anzeiger.'—We beg leave to call the attention of our readers to the new serial which Prof. J. Victor Carus, of Leipzig, is now bringing out under this name. The 'Zoologischer Anzeiger' gives the titles of all newly published works on zoology, as also of papers published in periodicals, and thus forms a kind of sequel to the well-known 'Bibliotheca Zoologiæ' of Carus and Engelmann. Short scientific communications and other notices are also inserted, as likewise lists of the names and addresses of the occupants of official posts in Museums, Universities, and other scientific institutions. Four numbers are already issued.

New Work on Cage-Birds.—Dr. Anton Reichenow, of the Berlin Museum, has commenced a new illustrated work on foreign cage-birds, under the title 'Vogelbilder aus fernen Zonen.' It is published by Th. Fischer, of Cassel, and the drawings are by Mutzel. The first part is devoted to the Parrots.

Socotra.—We are glad to say that there is some prospect of our shortly obtaining some insight into the zoology of Socotra. The British Association have appointed a committee to consider what can be done towards the investigation of this *terra incognita,* and have made a grant of £100 for the purpose under their auspices. A very competent naturalist is likely to undertake an expedition there in the course of the ensuing winter. As regards the birds of Socotra, our whole knowledge at present is contained in a paragraph of Lieut. Wellsted's Report*, which includes "Bats" and "Cassowaries" in the avifauna. We hope before another year has passed to have some more definite information on this interesting subject.

We are sorry to hear that the valuable collection of Chinese birds made by our lamented Member, the late Mr. Robert Swinhoe, F.R.S., which contains about 3700 skins, referable to some 650 species, is still undisposed of. It was offered, we are told, to the British Museum, but, as has often happened in such cases, declined. It would be greatly to be lamented if this collection, which contains about 200 types of species first described by Mr. Swinhoe, and the originals of his numerous papers on Chinese ornithology, should pass out of the country. We still hope it will find a resting-place where it may remain accessible, as heretofore, to British ornithologists.

Obituary.

Andrew Anderson, an able and zealous Indian ornithologist, and a Member of our Union, who died in July of the present year, spent most of his life in India, in the Indian Civil Service. At the time of the Indian Mutiny he was one of the twelve gallant civilians who so successfully defended the Billiard Room at Arra against the mutineers. In 1869 he came home on furlough; and before returning to India in October 1871, he became a Fellow of the Zoological Society of London and a Member of the British Ornithologists' Union. On his return to India he became District-Judge at Futtehgurh, which post in the service he held until his death. At Futtehgurh he found ample field for his ornithological pursuits; and that he made good use of his opportunities is evinced by his able and careful papers contributed to 'The Ibis' and to the Zoological Society between 1871 and 1878.

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* Journ. R. Geogr. Soc. v. p. 204 (1835).

All his letters to his various naturalist friends in this country showed the enthusiasm with which he entered into this congenial work, and the extreme care he always bestowed upon minute details in his observations—an important qualification in an accurate field naturalist.

In June 1877 he came again to England, but this time in bad health; and for many weeks he was an invalid and confined to his room. He temporarily recovered, and was able occasionally to visit his friends, and during the short time that elapsed before his death took as keen an interest as ever in his natural-history pursuits.

We greatly regret to report the death of another of our Members, Mr. Henry Durnford, which took place at Salta, in Bolivia, on the 11th of July last. After returning from Patagonia, as mentioned in the first article in this number, Mr. Durnford had started on an expedition to the northward when the melancholy event which we record took place. As no particulars have yet reached this country, we defer a more lengthened notice of this ardent ornithologist till our next issue.

Another energetic traveller, Mr. E. C. Buxton, has also passed away. Mr. Buxton's name will be best known to the readers of 'The Ibis' for the useful collection of birds he formed in the island of Sumatra, which formed the subject of Lord Tweeddale's article in the last volume of this Journal (Ibis, 1877, pp. 283–323). On his return from the east Mr. Buxton undertook an exploring journey to the Niger, where, after a short illness, he met his death.

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AND
PHILIP LUTLEY SCLATER, M.A., Ph.D., F.R.S.,
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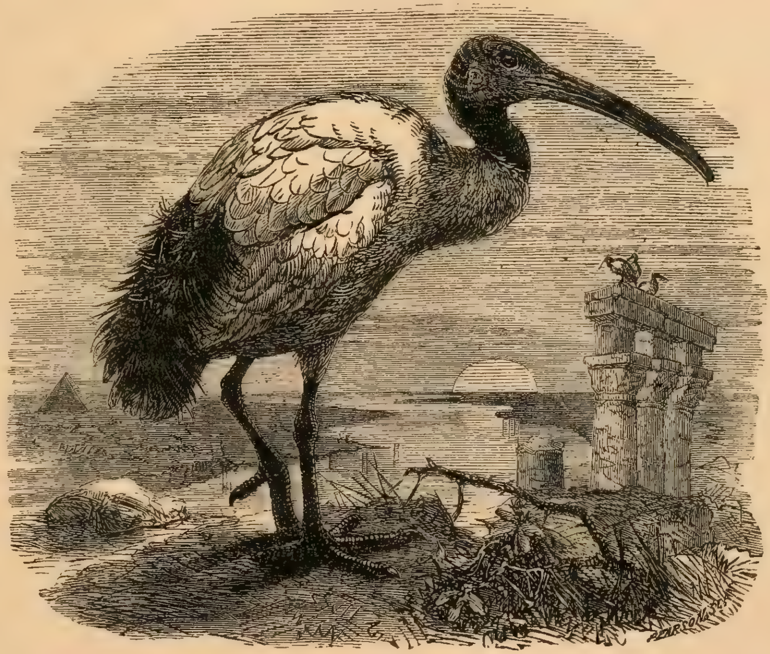

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List of Publications received since the issue of No. 4.

1. R. Collett. Mindre Meddelelser vedrörende Norges Fuglefauna i Aarene 1873–76. Særskilt Aftryk af Nyt Magazin for Naturvidenskaberne. Christiania: B. M. Beutzens Bogtrykkeri. 1877.

2. R. Collett. "Om et Par Fuglesamlinger fra Madagascar-Regionen, modtagne fra Aug. Lantz i 1867, og Missionslæge Borchgrevink i 1875," Vid. Selsk. Forh. Christiania, 1877.

3. R. Collett. "Om et Par for Norges Fauna nye Fuglearter," Videns. Selsk. Forh. Christiania, 1877.

4. G. Lawrence. "A Provisional List of the Birds procured and noticed by Mr. Fred. A. Ober in the Island of Dominica," Forest and Field (New York), Dec. 6, 1877.

5. Godwin-Austen. Descriptions of supposed new Birds from the Naga Hills and Eastern Assam. By Lieut.-Col. H. H. Godwin-Austen, F.Z.S. &c. From the 'Annals and Magazine of Natural History' for December 1877.

6. Rowley, G. D. 'Ornithological Miscellany,' Part ix., 1877.

7. Contributions to the Natural History of the Hawaiian and Fanning Islands and Lower California, made in connection with the United-States North-Pacific Surveying Expedition, 1873–75. By Thos. H. Streets, M.D. 8vo: Washington, 1877. (Bulletin of the United-States National Museum, No. 7, pp. 172.)

8. J. A. Allen. "Sexual Variation in the Genus *Leucosticte*," Field and Forest, Nov. 1876, p. 76.

9. G. N. Lawrence. "Descriptions of new Species of Birds of the Families Trochilidæ and Tetraonidæ," Ann. N.Y. Ac. Sc. i. p. 50.

10. O. F. v. Möllendorff. "The Vertebrata of the Province of Chihli, with Notes on Chinese Zoological Nomenclature," J. North-China Branch R. As. Soc. 1877, p. 41.

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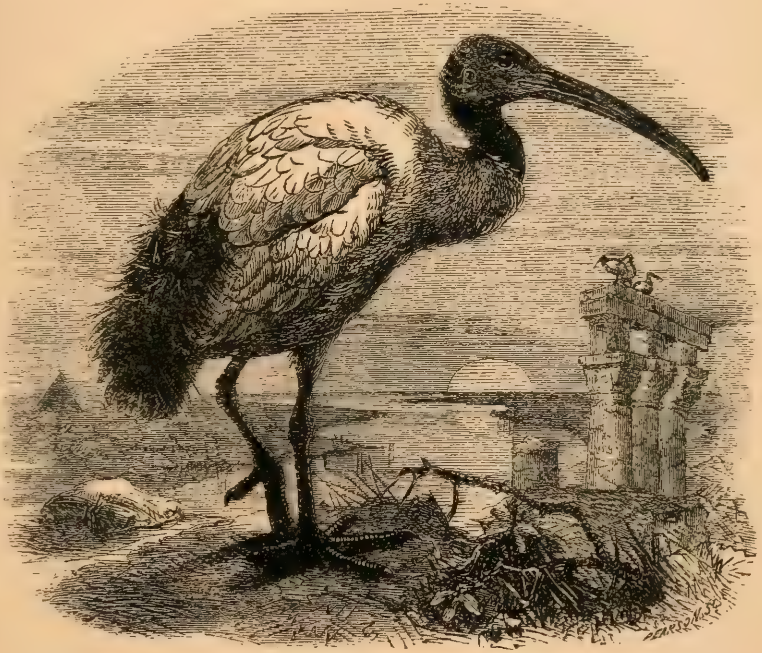

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LIST OF PUBLICATIONS RECEIVED SINCE THE ISSUE OF No. 5.

1. A. VON PELZELN. Bericht über die Leistungen in der Naturgeschichte der Vögel während des Jahres 1876.

2. F. BRÜGGEMANN. On the Young of *Pityriasis gymnocephalus.* From the 'Annals and Magazine of Natural History,' January 1878.

3. F. BRÜGGEMANN. Weitere Mittheilungen über die Ornithologie von Central-Borneo.

4. G. FISCHER. Bemerkungen über zweifelhafte celebensische Vögel.

5. E. MULSANT. Description d'une espèce nouvelle de Trochilidé. (Soc. Linn. de Lyon, 12 Oct. 1877.)

6. E. MULSANT. Histoire Naturelle des Oiseaux-Mouches, iv. Parts i., ii.

7. L. BUREAU. De la Mue du Bec et des Ornements Palpébraux du Macareux arctique (*Fratercula arctica* (Linn.)), Steph., après la saison des amours. (Bull. de la Soc. Zool. de France, 1878.)

8. R. OWEN. On the Solitaire (*Didus solitarius,* Gm.; *Pezophaps solitaria,* Strickl.). (Ann. & Mag. N. H., Jan. 1878.)

9. R. B. SHARPE. Contributions to the Ornithology of New Guinea.—Part II. On the Ornithological Collections formed by the late Dr. James in South-eastern New Guinea and Yule Island. (Journ. Linn. Soc., Zool. xiii.)

10. R. RIDGWAY. Studies of American Herodiones.—Part I. Synopsis of the American Genera of Ardeidæ and Ciconiidæ: including descriptions of three new Genera, and a Monograph of the American Species of the Genus *Ardea,* Linn. (Bull. Hayden's Survey, iv. No. 1.)

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PHILIP LUTLEY SCLATER, M.A., Ph.D., F.R.S.,
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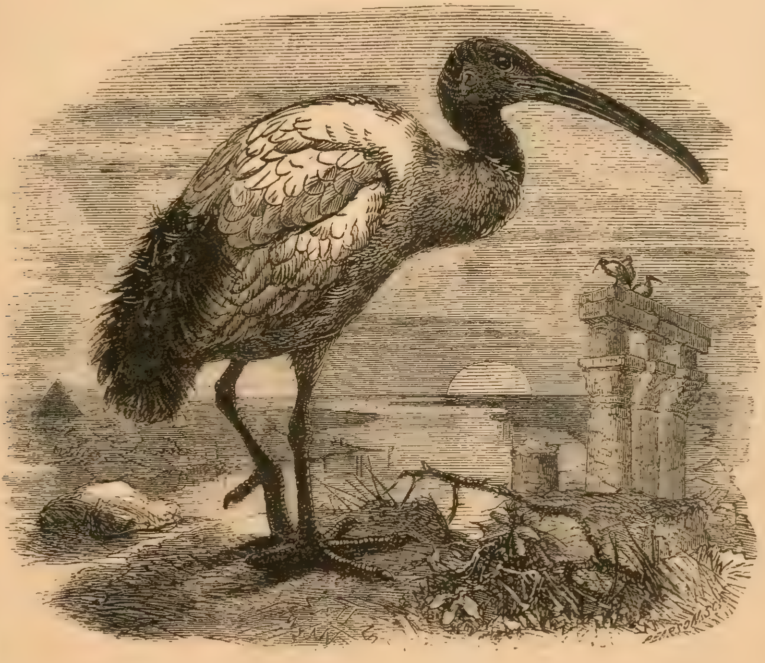

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List of Publications received since the issue of No. 6.

1. Lorenzo Camerano. Intorno all' Anatomia della *Nasiterna pusio*, Scl. (Atti d. R. Accad. Sci. Torino, vol. xiii. Gennaio 1878).

2. M. E. Oustalet. Description de quelques espèces nouvelles de la Cochinchine et de la Nouvelle-Guinée. (Extrait dù Bull. Soc. Philomat. de Paris, Dec. 1877.)

3. Prof. Pietro Pavesi. Sulla prima e recentissima comparsa in Lombardia del Beccafico di Provenza. (R. Inst. Lombardo d. Sci. e Lettere, Dec. 1877.)

4. L. Carl. Untersuchungen über den Schädelbau domesticirter Tauben. Separatabdruck aus dem Osterprogramm 1878 der Realschule zu Pirna.

5. Bulletin of the Nuttall Ornithological Club, April 1878.

6. Harvie Brown. Supplementary Notes on the Birds found breeding in Sutherland. (Proc. N.H. Soc. Glasg. 1877.)

7. J. H. Gurney, Jun. Notes on the Fern Islands and some of the Birds which are found there. (Proc. N.H. Soc. Glasg. 1878.)

8. A. R. Wallace. Tropical Nature. 8vo, 1878. Macmillan & Co.

9. United-States Geological Surveys west of 100th meridian, Lieut. Wheeler in charge.—IV. Palæontology. 1877.

10. United-States Geological Exploration of the 40th parallel, Clarence King in charge.—Part III. Ornithology. By Robert Ridgway. 1877.

11. D. G. Elliot. Description of an apparently new Species of Pigeon of the Genus *Ptilopus*. (Ann. & Mag. N. H. April 1878.)

12. D. G. Elliot. A Study of the Pteroclidæ, or Family of the Sand-Grouse. (Proc. Zool. Soc. 1878, p. 233.)

13. T. Salvadori. Descrizione di una nuova specie di uccello del genere *Chalcopsittacus*, Bp., e Note intorno ad altre specie di uccelli della Nuova Guinea. (Atti della R. Accad. Sci. Torino, vol. xiii. p. 309.)

14. T. Salvadori. Catalogo di una collezione di uccelli di Tarawai fatta dai cacciatori del Sig. A. A. Bruijn. (Atti della R. Accad. Sci. Torino, vol. xiii. p. 317.)

15. Edwyn C. Reed. Apuntes de la Zoologia de la Hacienda de Canquenes, Provincia de Colchagua. 8vo, Santiago de Chile, 1877.

16. Annual Report upon the Geographical Surveys west of the 100th Meridian, in California, Nevada, Utah, Colorado, Wyoming, New Mexico, Arizona, and Montana. By George M. Wheeler. 8vo, Washington, 1876.

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LIST OF PUBLICATIONS RECEIVED SINCE THE ISSUE OF No. 7 NOT NOTICED IN THE PRESENT NUMBER.

1. Godwin-Austen. Sixth List of Birds from the Hill-ranges of the North-east Frontier of India. (J. A. S. B. xlvii. pp. 12–25.)

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